15 Cents a Copy

The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

Published Every Thursday TULSA, OKLAHOMA, OCTOBER 21, 1926 $6.00 a Year

Ferrer John Library
DEC 27 '27—4.5

"There is always someone who is ready to appropriate the ideas of others to his own personal gain—ideas which have cost thousands of dollars to develop, and which would have been impossible of development had it not been for the solemn grant of the Government for the exclusive use of these ideas."

—ERLE P. HALLIBURTON.

HALLIBURTON
OIL WELL CEMENTING
COMPANY
Duncan, Oklahoma

Advertisers' Index on Page 33 Table of Contents on Page 34

45 "SEQUENCE CALLS"

$82,500

WORTH OF BONDS

IN BRINGING out a new bond issue, a Cleveland financial house regularly files with the long distance operators from 50 to 100 sequence calls to banks and investment firms in other cities. The calls come in in one-two-three order. As one is finished another is put up, so that a greater number of calls can be completed within a given time. For one such issue, 47 calls were filed . . . 45 were completed. Charges, $40 . . . sales, $82,500.

"SEQUENCE lists" are another convenience worked out to increase the effectiveness of long distance campaigns and to save the time of the telephone user. Many who formerly used the telephone only locally are now using it to distant states and towns. Many who used only single calls are now taking advantage of the sequence method. Concerns that at first used long distance calls only when an emergency arose, now depend on them to make appointments, to save long and tiresome trips, to make sales where interviews have been denied, and to make purchases where both time and price are important.

Would it not be worth while to make a thorough check up of your various departments and executives to see if the telephone is bringing its full resources to bear upon your business? Each working day sees another million dollars invested in the communication equipment of the Bell System. Does your business secure its share of the added advantages of these developments? The telephone resources of any business are worthy of careful study. Firms are frequently amazed to discover their unthought-of possibilities.

A Commercial Department representative will gladly call to explain the use of sequence lists and consult with you concerning what Long Distance can do for your business.

And now, what distant company or executive would it be to your advantage to call? The buyers of seventy thousand communities are within your easy reach. . . . . *Number, please?*

BELL LONG DISTANCE SERVICE

s
e
a
e
o.
n
n.
ed
e-
of
s-
ill
nd
ce
ve
y-
in
se?

The ADVERTISERS' INDEX

A

Acme Fishing Tool Co.
Air Cleaning & Reaming Corp.
Ajax Iron Works 94-95
Ajax Rope Co. 167
Aluminum Co. of America
Amarillo Abstract Co. 166
American Appraisal Co.
American Asphalt Paint Co.
American Car & Foundry Co.
American Mfg. Co. of Texas
American Radiator Co.
American Roller Bearing Co. 126
American Rolling Mill Co.
American Schaeffer & Budenberg Corp. 113
American Sheet & Tin Plate Co.
American Spiral Pipe Works
American Telephone & Telegraph Co. Inside Front Cover
American Well Works
Anderson & Anderson 188
Anderson, Carl B. 188
Anderson Engine & Foundry Co.
Andrews Steel Co. 129
Arco Company, The 76
Armstrong Bros. Tool Co. 166
Askania, Werke, A. G.
Ass'n. of Natural Gasoline Manufacturers 60
A. T. & S. F. Railway Co.
Athey Truss Wheel Co.
Atlas Ball Co.
Auer, C. A.
Austin Co.
Axelson Machine Co.

B

B. & A. Specialty Co. 103
Baash-Ross Tool Co.
Babcock & Wilcox Tube Co., The
Baker Casing Shoe Co. 86
Baldwin Chain & Mfg. Co.
Barber-Greene Co.
Barnickel, Wm. S., & Co. 165
Barnsdall Refineries, Inc.
Bartlesville Supply Co.
Belle City Mfg. Co. 125
Bell Oil & Gas Co., The 49
Bessemer Gas Engine Co. 51
Bignall & Keeler Machine Works 27
Black Steel & Wire Co.
Blackmer Pump Co.
Blaw-Knox Co.
Borden Co.
Bovaird & Seyfang Mfg. Co.
Bovaird Supply Co., The 29
Bowser, S. F., & Co., Inc.
Braden Steel & Winch Co. 4
Brady Conveyors Corp.
Braun, C. F., & Co. 20
Bridgeport Machine Co. 115
Bristol Co.
Brederick & Bascom Rope Co. 21
Brokaw, Dixon, Garner & McKee 188
Brooks Engineering Corp.
Brown, Arthur C. 167
Brown Tool Co., Inc.
Brownell Co. 167
Brown Instrument Co. 5
Brown & Thomsen 168
Buckeye Traction Ditcher Co.
Buda Co. 112
Buffalo Gasolene Motor Co. 15
Burns Tool Co.
Burt Corporation
Burt Mfg. Co.
Busch-Sulzer Bros. Diesel Engine Co.
Butler Mfg. Co.
Byers, A. M., Co.
Byron Jackson Pump & Mfg. Co., Inc. .. 83

C

Camera Craft Studios 166
Campbell, J. A. 90
Canadian Pacific Railway Co.
Carbondale Machine Co.
Caudill, Samuel J. 167
Celite Products Co.
Central Alloy Steel Corp. 105
Central Forging Co.
Central Tube Co. 166
Chain Belt Co.
Champion Machine & Forging Co.
Chaplin-Fulton Mfg. Co. 166
Chapman Valve Mfg. Co.
Chestnut & Smith Corp.
Chicago Bridge & Iron Works 69
Chicago Pneumatic Tool Co.
Chicago Steel Foundry Co.
Chisholm-Moore Mfg. Co. 111
Clapp, Frederick G. 188
Clark Bros. Co. 66-67
Clark, Robert W. 188
Classified Wants 140-141
Cleveland Tractor Co.
Cleveland Trencher Co., The
Climax Engineering Co.
Coatesville Boiler Works
Columbian Rope Co.
Columbian Steel Tank Co.
Columbus Forge & Iron Co.
Columbus Sucker Rod Co.
Continental Motors Corp.
Continental Supply Co. 32
Cooper, C. & G., Co. 63
Cox & Sons Co., The
Crane Co.
Crane Packing Co.
Crown Central Petroleum Corp.
Cushing, Tim, Tool & Supply Co.

D

D. & B. Pump & Supply Co.
D. & N. Specialty Co.
Darling Valve & Mfg. Co.
Dart, E. M., Mfg. Co.
Davis, G. M., Regulator Co.
Dayton Pipe Coupling Co. 119
Dearborn Chemical Co.
De La Vergne Machine Co.
Delta Electric Co.
Detroit Graphite Co.
Diamond Drill Carbon Co. 188
Dixon, Joseph, Crucible Co.
Dodge Mfg. Co.
Donovan Boiler Works, Inc.
Dresser, S. R., Mfg. Co. 43
Dunn Mfg. Co.
DuPont De Nemours & Co., Inc., E. I. .. 101
Durabla Mfg. Co.
Duriron Company, The

E

Eagle-Picher Lead Co. 2
Earnshaw, G. W. 167
Eastern Torpedo Co.
Eclipse Paint & Mfg. Co. 116
Edward Valve & Mfg. Co.
Elliott Core Drilling Co.
Empire Refineries, Inc.
Emsco Derrick & Equipment Co. 30
Equitable Meter & Mfg. Co. 14
Eureka Burner Co.

F

Fairbanks-Morse & Co.
Farley Machine Works Co.
Federal Supply Co.
Fenwick-Reddaway Mfg. Co. 126
Fisher Governor Co. 52
Foamite-Childs Corp.
Fohs, F. Julius 168
Foos Gas Engine Co. 122
Ford Chain Block Co. 132
Ford Motor Co.
Fort Worth Laboratories 167
Foxboro Co., Inc., The 100
Franklin Valveless Engine Co. 78-79
Frick-Reid Supply Co. 59
Full Crawler Co.

G

Gallagher Co.
Gardner Governor Co.
Garlock Packing Co.
Gaso Pump & Burner Mfg. Co. Inside Back Cover
General American Tank Car Corp.
General Insulating & Mfg. Co. 134
General Motors Truck Co.
General Oil Tools Co.
Gilbert & Barker Mfg. Co.
Gilfillan Machine Works
Gomory, W. L. 167
Goodrich, B. F., Rubber Co.
Goodyear Tire & Rubber Co.
Gott, H. P., Mfg. Co.
Goulds Pumps, Inc. 168
Graham Brothers
Gray Processes Corp.
Graver Corp. 147
Greenspon's Joseph, Sons Iron & Steel Co. 130
Griscom-Russell Co. 87
Guilberson Corp. 8
Gulf Refining Co. 22

H

Halliburton Oil Well Cementing Co. Front Cover
Harrisburg Pipe & Pipe Bending Co.
Hazard Mfg. Co.
Heppenstall Forge & Knife Co.
Herald Brothers 188
Hercules Motors Corp.
Hercules Tool Co.
Heydrick Mapping Co. 167
Hill, Hubbell & Co.
Hills-McCanna Co. 109
Hinderliter Tool Co.
Homestead Valve Mfg. Co. 163
Hood, H. H. 188
Hoover Steel Ball Co. 104
Hope Engineering & Supply Co. 26
Hopkins, Edwin B. 168
Hornblower & Weeks
Hough, Charles N., Mfg. Co.
Hoyt Metal Co. 115
Hughes Tool Co. Back Cover
Humble Oil & Refining Co.
Hunt, Robert W., Co.
Huntley & Huntley 168

I

Illinois Glass Co.
Imperial Belting Co. 136
Imperial Royalties Co. 166
Ingersoll-Rand Co. 131
International Derrick & Equip. Co.
International Harvester Co. of America.
International Supply Co.
Iron King Mfg. Co.

J

Jarecki Mfg. Co.
Jefferson Union Co.
Jeffrey, Douglas G.
Johns-Manville, Inc.
Jones, S. M., Co. 24

K

Kansas City Hay Press Co. 136
Kaw Steel Construction Co.
Kellogg, M. W., Co. 163
Kelly, John Eoghan 168
Kelly-Springfield Tire Co. 19
Kennedy Valve Mfg. Co.

K

Kerotest Mfg. Co. 28
Kerr, John B. 168
Keuffel & Esser Co.
Kewanee Boiler Co.
Key Boiler Equipment Co. 130
Kinley, M. M., Co.
Kirk & Hoover 188

L

Landis Machine Co. 3
LaPlante-Choate Mfg. Co.
Larkin & Co.
Layne & Bowler Co.
Leidecker Tool Co. 25
Leschen, A., & Sons Rope Co.
Linde Air Products Co. 1
Link-Belt Co.
Longyear, E. J., Co. 132-167
Lucey Mfg. Corp. 17
Ludlow Valve Mfg. Co. 128
Lufkin Rule Co. 168
Lunkenheimer Co. 16

Mc

McCord Radiator & Mfg. Co. 98
McGregor Working Barrel Co. 166
McIntosh & Seymour Corp.
McJunkin Supply Co.
McKee, Arthur G., & Co.
McNutt, V. H. 168

M

Magnolia Petroleum Co. 99
Maloney Tank Mfg. Co. 93
Manzel Bros. Co.
Marion Machine Foundry & Supply Co.
Marsh Gauge Pole Co. 167
Master Builders Co.
Mathieson Alkali Works, Inc.
Matson, George C. 168
Maverick, Phillip 188
Meier, E. C., Lubricating Co.
Merco Nordstrom Valve Co.
Messimer, H. H. 167
Metric Metal Works
Midwest Piping & Supply Co. 110
Miller Improved Gas Engine Co. 6
Miller, Max B., & Co., Inc. 102
Mine Safety Appliance Co. 137
Missouri Wood Working Co. 188
Moon Mfg. Co.
Moore, Lee C., & Co., Inc. 56
Mosler Metal Products Corp.
Munn & Co. 167
Murray Rubber Co. 128
Murray Tool & Supply Co.
Myers, F. E., & Bro., Co. 188

N

Nabors, W. C., Co. 139
National Carbon Co., Inc. 1
National Gas Products Corp.
National Lead Co.
National Petroleum Engineering Corp.
National Petroleum Marketers Ass'n.
National Pigments & Chemical Co. 137
National Supply Co. 96-97
National Transit Pump & Machine Co. .. 89
National Tube Co. 88
National Turnbuckle Derrick Co.
Newton Process Mfg. Co. 41
Norris Bros., Inc.
Norris, W. C.
North American Car Co.
Northern Fire Apparatus Co.
Northern Oil Information Bureau 167
Northrup Equipment Co. 165
Nuttall, R. D., & Co.
Nye Tool & Machine Works 7

O

O'Brien Steel Construction Co.
Oertling, L., Ltd.
Ohio Steel Foundry Co.
Oil Conservation Engineering Co.
Oil Country Specialties Mfg. Co.
Oil Insurance Association 124
Oil Well Supply Co. 73
Oklahoma Armature Repair Co.
Oklahoma Engraving Co.
Oklahoma Steel Casting Co.
Oxweld Acetylene Co. 1

P

Parkersburg Machine Co.
Parkersburg Rig & Reel Co. 13
Partrige-Scotford Stamp & Stencil Co.
Patrick, R. S. 135
Pattin Brothers Co. 161
Penberthy Injector Co. 134
Pennsylvania Engineering Works
Petroleum Appliance Co. 124
Petroleum Iron Works
Pforzheimer, Carl H., & Co. 142
Pickering Governor Co.
Pittsburg Boiler & Machine Co.
Pittsburgh-Des Moines Steel Co. 129
Pittsburgh Meter Co. 143
Pittsburgh Steel Products Co.
Pilbrico Jointless Firebrick Co.
Plymouth Cordage Co. 132
Porter & Co. 45
Powell, William Co.
Power Mfg. Co.
Power Piping Co. 121
Power Plant Equipment Co.
Power Specialty Co.
Prescott Co., The 10
Prest-O-Lite Co., Inc., The 1
Pure Oil Co. 123
Pyle-National Co.

R

Ranney Oil Mining Co. 188
Ratigan, J. P., Co.
Reading Iron Co. 11
Reading Steel Casting Co., Inc.
Reed Roller Bit Co. 92
Regan Forge & Engineering Co. 70
Reid, Joseph, Gas Engine Co. 128
Republic Flow Meters Co.
Republic Iron & Steel Co. 107
Republic Supply Co.
Rich, John L. 168
Ridge Tool Co.
Ring, DeWitt T.
Riter-Conley Co. 160
Robinson, A. 165
Roots, P. H. & F. M., Co.
Ross Heater & Mfg. Co., Inc. 9
Ross-Meehan Foundries
Ryerson, Joseph T., & Sons, Inc. 167

S

Safety Pulling Machine Co. 83
Sargent Engineering Corp., The
Schutte & Koerting Co.
Shaffer, J. E., Co.
Shaffer Tool Works
Shaw, S. F.
Sharples Specialty Co.
Sheffield Steel Corp. 108
Sherwin-Williams Co.
Shippers' Car Line Corp. 139
Simplex Equipment Co.
Sinclair Refining Co. 153
Sivyer Steel Casting Co. 120
Skelly Oil Co.
Skinner, M. B., Co. 188
Smith, A. O., Corp.
Smith Separator Co. 52-127
South Chester Tube Co.
Southern Cornice Works 168
Southwestern Engineering Corp. 75
Southwestern Engineering Co., Inc.
Spang & Co. 21
Spang, Chalfant & Co., Inc. 65
Spence Machine Co.
Spencer Trailer Co.
Stalder, Walter 168
Standard Engineering Co. 165
Stanley Belting Corp. 108
Star Drilling Machine Co.
States Engineering Co., The 135
Stearns-Roger Mfg. Co. 131
Steiner, George 167
Strom Steel Ball Co. 117
Sullivan Co., The
Sullivan Machinery Co. 133
Superior Tube Co.

T

Taubman Supply Corp.
Templeton, Kenly & Co., Ltd. 160
Texas Company, The 84-85
Thomas, C. R. 168
Timken Roller Bearing Co. 106
Tips Engine Works
Titusville Forge Co.
Titusville Iron Works
Toledo Pipe Threading Machine Co. 133
Trimont Mfg. Co.
Trumble Gas Trap Co. 164
Truscon Steel Co.
Tulsa Sheet Metal Co.
Twin Disc Clutch Co. 164

U

Union Machine Co.
United Alloy Steel Corp.
United Iron Works, Inc.
United States Cast Iron Pipe & Fdy. Co. 133
United States Rubber Co. 81
Universal Oil Products Co. 58
U. S. Tool Co.

V

Van Couvering, M. 168
Victaulic Co. of America
Vogt, Henry, Machine Co. 12
Volz Engineering Equipment Co.

W

Wall Rope Works, Inc.
Walsh & Weidner Boiler Co. 127
Walworth Co.
Warren Petroleum Co.
Waukesha Motor Co.
Westcott & Greis
Western Machinery Co.
Western Supply Co.
Westinghouse Electric & Mfg. Co. 23
Wheeling Steel Corp.
Wickwire-Spencer Steel Co.
Wico Electric Co.
Widdell Engineering Co.
Williams, J. H., & Co.
Williamsport Development Co. 168
Williamsport Wire Rope Co. 91
Williams Tool Corp.
Wilson Oil Tools Corp.
Wilson Welder & Metals Co.
W-K-M Company, Inc.
Wood & Wood 168
Worthington Pump & Mach. Corp. 114
Wright Mfg. Co. 161

Y

Yale & Towne Mfg. Co.

Z

Zero Hour Torpedo Co.

WHAT AND WHERE TO BUY—PAGES 189-190-191

The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

VOL. 25. NO. 22. TULSA, OKLAHOMA, OCTOBER 21, 1926

Copyright, 1926, by The Petroleum Publishing Co.

TABLE OF CONTENTS

SPECIAL ARTICLES

Crude Price Reduction Expected Soon 35
By Andrew M. Rowley
Rapid increase in production in Oklahoma chief factor. Situation, however, has largely been discounted.

Sources of Our Increased Production 37
By James McIntyre
Thirty-two pools show greater output than year ago and two averted shortage.

Automatic Control Made Good Record 39
By J. L. Dwyer
Device given first test in rotary drilling in Mid-Continent expected to become standard equipment.

Hydrogen Sulphide in the Panhandle 40
By W. P. Yant and H. C. Fowler
Report on investigation in Borger district and in Reagan County and McCamey Fields.

The Engineers Meeting (Editorial) 42

Oil City's Loss (Editorial) 42

Technical Questions Answered 44
By Dr. C. K. Francis

Seminole Dominant Feature of Week 46
Pine Island and Louisiana Gulf Coast, with Sunburst Field, Montana, report significant completions.

More Recovery by Use of Gas and Air 80
By L. L. Brundred
Introduction into sand aids crude production and reduces irrecoverable remainder.

Development and Operations in Panhandle 80
By E. J. McKee

Effect of Dissolved Gas on Viscosity 113
By C. E. Beecher and I. P. Parkhurst

Production Difficulties in Panhandle 154
By E. O. Bennett
Troubles begin with drilling and continue until crude is on the market.

Impressions at Engineers' Meetings 154
By James McIntyre

FIELD OPERATIONS

Late Fields 46

North Texas 47
By C. D. Lockwood

Texas Panhandle 48
By C. D. Lockwood

Oklahoma 50
By J. L. Dwyer

Kansas 50
By J. L. Dwyer

South End of Seminole Pool (Map) 53

North Louisiana-Arkansas 54-57
By J. H. Dameron

Map of Pine Island District 54

Mexico 57
By George Blardone

Rocky Mountain Area 58
By Frank B. Taylor

Canada 58
By Victor Lauriston

Gulf Coast 61
By P. L. McGreal

Southwest Texas 62
By B. D. Stevenson

Artesia, New Mexico 62
By Special Correspondent

California 64
By L. P. Stockman

Central West 68
By Whit

Michigan 68
By Whit

Pennsylvania-West Virginia 71
By D. S. Wakenight

Kentucky-Tennessee 71
By D. S. Wakenight

REFINING AND MARKETING

Oklahoma Refined Market Uncertain 36
By Neil Williams
Gasolines decline slightly but prices as whole steadier. Situation at standstill pending expected crude cut.

Montana Needs Lower Freight Rates 38
By C. O. Willson
Present tariffs working hardship on both producers and refiners. Refinery requirements exceed supply.

More Activity in Chicago Market 142
By J. B. Waldo

Resistance to Reductions in East 142
By N. O. Fanning

Inspect Equipment Before Operation 144
By Frank B. Peterson
Obtain best results in natural gasoline manufacture when mechanism is thoroughly tested.

Refining and Marketing News 146

N. P. M. A. Convention Plans 146

Patent Club Hearing 146

Plant Operators' Page 148

Refinery and Crude Prices 150-151

Tankwagon Quotations 152

Possibilities in Petroleum Alcohols 162
By Harold S. Davis and Wallace J. Murray
Better economic utilization by greater diversity of high grade products.

ARTICLES OF GENERAL INTEREST

The Advertisers' Index 33

Men Known in Oildom and Personals 72

Equipment and Supplies 74

Natural Gas Developments 77

Removing Water From Gas Wells 77
By C. H. Lutz

Oil Country Goods Show Little Decrease in Buying 114
By B. E. V. Luty

Classified Want Advertisements 140-141

Oil Securities Inactive 149
By N. O. Fanning

Detailed Operations in All Fields for September 169

What and Where to Buy 189-190-191

Crude Petroleum Statistics 192

BE A REGULAR READER

The OIL and GAS JOURNAL Tulsa, Okla.

You are hereby directed to mail The Oil and Gas Journal to me for.....year. Enclosed find remittance $.....

Classify my interests as checked by me.

.....Producing .....Refining
.....Equipment .....Marketing

Name.....
Address.....
City.....

$6 a Year
$3 6 Months

Refinery Section Starts on Page 142

Expect Crude Price Reduction Soon

Highest daily average estimated production week ended May 30, 1925, 2,347,984 bbls. Lowest in 1925, January 3, 1,911,730 bbls.

Rapid Increase in Production in Oklahoma Chief Factor. Situation, However, Has Largely Been Discounted

By Andrew M. Rowley

Highest daily average estimated light oil production in 1925, week ended January 17, 1,525,220 bbls. Lowest in 1925, July 18, 1,374,173 bbls.

A readjustment in the crude oil price structure in the Mid-Continent area is expected to be announced within the very near future. Whether a reduction in the Mid-Continent will be followed by price cuts in other sections of the country is a matter of conjecture although operators feel such price reductions may be expected as conditions in the Mid-Continent area are more or less of a barometer of the entire industry.

It is not believed the large crude oil purchasers can maintain the present price schedule very long in the face of rapidly mounting production. As long as the increase in crude oil output came from the Texas Panhandle and the Spindletop Field in the Gulf Coast, there was no need to fear reduction in prices for only a very little of the crude from the former area was reaching the markets and Spindletop crude was of value chiefly as a lubricant. But with the big increase in output from the Seminole Pool in Oklahoma, the gain made last week in the North Braman Field, also in Oklahoma, the expected increase in production in California beginning to materialize, and with no sign of a substantial decline evident in any area, the situation has about reached the point where reductions in price can hardly be avoided.

For the first time since the week ending December 20, 1924, production of crude in Oklahoma is more than 500,000 barrels daily, the output on Tuesday of this week averaging about 508,000 barrels, with further substantial gains almost certain from the Seminole Field. The storage situation in Oklahoma and Kansas has changed during the past 10 days. About 10 days ago it was estimated approximately 25,000 barrels of crude was being withdrawn from storage in these two states every day, whereas early this week it is estimated there is a net increase in storage of approximately 10,000 barrels daily, with every probability this quantity will be increased during the next week or so.

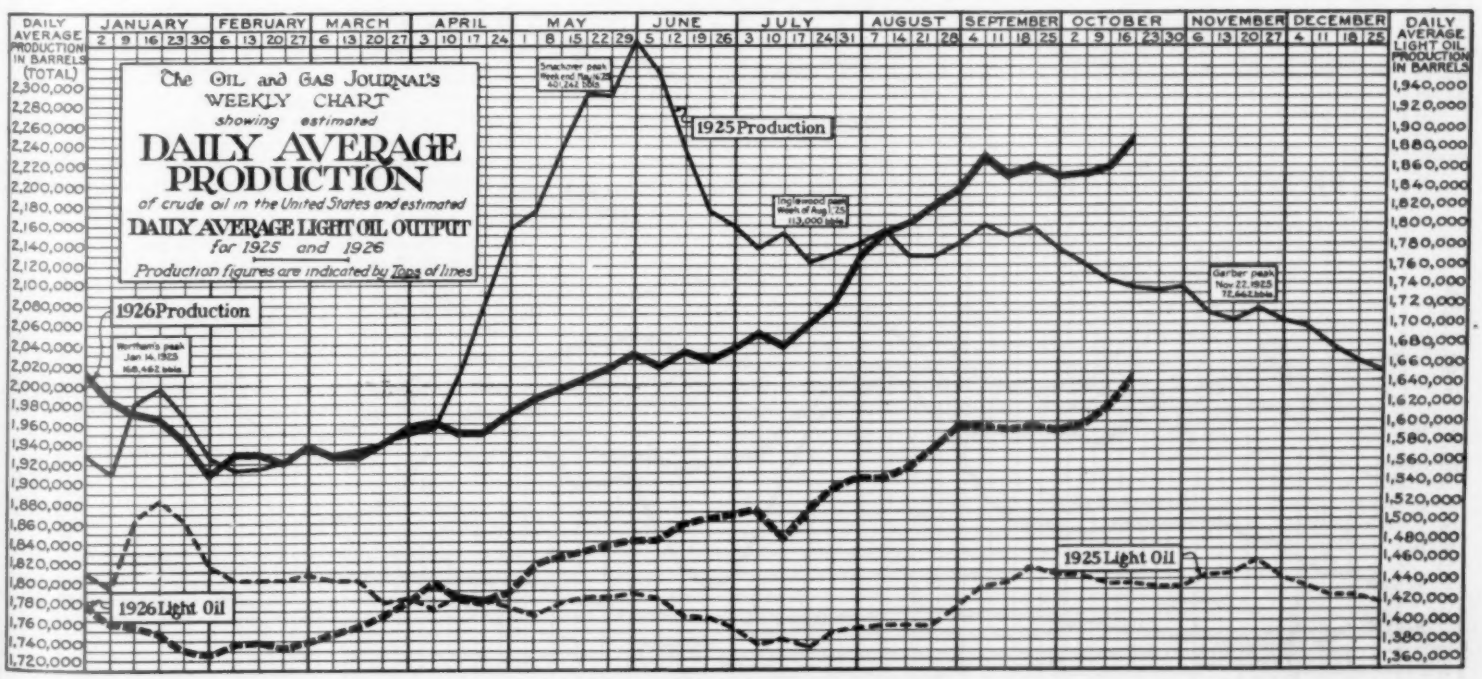
Operators in the different fields have been anticipating crude price reductions as the trend of production has been quite plain, consequently, decreases in the price schedule probably will have but little effect upon operations, unless a first reduction is followed shortly by other readjustments made with a view of curtailing operations. Consumption undoubtedly will establish a new record this fall and winter, so with the effect of crude price reductions largely discounted, the industry will "rock along as usual."

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity crude oil in the United States for week ended October 16, and a comparison with the previous week follows:

	Oct. 16		Oct. 9	
	Light	Heavy	Light	Heavy
Oklahoma—				
Tonkawa	36 330	.....	36 845	.....
Burbank	49,165	.....	47,770	.....
Other Osage Fields	34.320	.....	34 465	.....
Cushing and Shamrock	21 405	.....	21 420	.....
Bristow and Eastern Bristow	27.135	.....	27 270	.....
Cromwell	15.040	.....	15 235	.....
Garber	24 955	.....	26 050	.....
Blackwell-Braman	26 440	.....	25.970	.....
Seminole	47.330	.....	34.945	.....
Wewoka	26 905	.....	26 980	.....
Northern Miscellaneous	114 130	.....	114 250	.....
Southern Fields	64,220	.....	63,710	.....
Total Oklahoma	487 375	.....	474.910	.....
North Louisiana	41,560	15,445	41,365	16,700
Arkansas—				
Smackover	14.020	117,865	14.145	117,870
Miscellaneous	18,015	.....	18,145	.....
Total Arkansas	32 035	117,865	32 290	117,870
North Central and West Texas	196 200	.....	195.331	.....
Texas Panhandle	152,105	.....	149,495	.....
Powell	25.742	.....	26 300	.....
Mexia, Currie, Richland	14 765	.....	14,540	.....
Nigger Creek	12,900	.....	13.310	.....
Wortham	5,866	.....	5.950	.....
Kansas	114,310	.....	114,760	.....
Total Mid-Continent Area	1,082,458	133.310	1,059,251	134,570
Gulf Coast	.....	174 656	.....	173.255
Southwest Texas	.....	44,714	.....	44,970
Eastern	108 850	.....	109.200	.....
Rocky Mountain Area	99,375	.....	98,265	.....
California—				
Santa Fe Springs	47.000	.....	48,000	.....
Long Beach	93,500	.....	94.000	.....
Huntington Beach	52,000	.....	47,000	.....
Torrance	5.000	21,500	5.000	22,000
Dominguez	22.500	.....	22,500	.....
Roseerans	13,000	.....	13,000	.....
Inglewood	25,000	16,500	25.000	17,000
Ventura Avenue	52,000	.....	51,000	.....
Remainder of State	48.500	211,500	47,500	210,000
Total California	358,500	249,500	353,000	249,000
Total United States	1,649,183	602,180	1,619,716	601,795
Grand Total	2,251,363		2,221,511	

Total Increase, 29,852 Bbls.; Light Oil Increase, 29,467 Bbls.



WHAT AND WHERE TO BUY—PAGES 189-190-191

Oklahoma Refined Market Uncertain

Gasolines Decline Slightly But Prices as Whole Steadier. Situation at Standstill Pending Expected Crude Cut

By Neil Williams

Possibly at no other time this year have Oklahoma (Group 3) refined markets been as uncertain as they were the past week, especially on Monday and Tuesday. Although for the present nearly all products seemed stendier in price than for some time, general conditions continued so unsettled that almost anything could be expected in the way of trends.

As a result, a watchful waiting policy is being followed both by buyers and sellers, pending some development to guide them in future trading. The continued persistent lack of important demand still is the dominant factor, and with a Mid-Continent crude reduction expected, market students are hesitant to speculate on what the developments will be.

The Mid-Continent crude situation perhaps is the greatest question in refined markets. Although, in refining and marketing circles a general reduction in crude prices is expected in the near future, the uncertainty lies in the possible effect a reduction will have on the markets.

Ordinarily crude reductions mean proportionate cuts in refined quotations, but many sellers now are of the opinion that refined prices have declined to such a level that any crude reduction has been discounted. Whether this is so remains to be seen, but many buyers are withholding all purchases possible, expecting lower prices.

It can be said, according to market students, that present refined prices at least have an even chance of holding steady. Judging from the resistance offered by sellers the past week to further reductions, Oklahoma refiners are not in an alarmingly poor position.

There was a slight sagging of prices on some grades of gasoline, due to scattered offerings from various sources; but kerosene apparently is fairly well taken care of for the time being, and fuel oil has been practically unchanged for several weeks. These more or less steady prices have been in the face of a very slow spot market movement of material, a condition which might be expected to result in sharp break in prices.

May Act as Stabilizer

While in the past all things have been possible in refined markets, sellers believe that with Oklahoma refiners reported in a fair position, a Mid-Continent crude reduction will not mean further declines in refined prices, but rather will act as a stabilizer, restore confidence in the situation and stimulate buying.

Whether this is so is one of the uncertainties in the situation, as there are other market students who believe that a crude reduction will mean lower refined prices despite the present unfavorable relationship between refined markets and crude costs. They point out that while some buying might be held off in anticipation of lower crude prices, nevertheless only a certain amount of gasoline can be consumed ultimately, and jobbers at this time of year will not take out much more than their actual requirements at any price.

However, although past experiences show that jobbers do not readily stock up on gasoline at this time of year, many with a belief that the remainder of October and part of November might be a fair consumption period, might be anxious to buy more than their daily requirements in anticipation of this demand if they felt prices would not go lower in the meantime.

But, considering all these conditions, the period of peak gasoline consumption is over, market students point out, and if the refined market is to gain any

(Continued on Page 160)

REFINED MARKET BAROMETER

Refined markets were unsettled in nearly all districts of the country the past week, and on the whole were marking time pending developments in crude and tankwagon situations. Market prices showed few changes. Gasolines in some areas, particularly the Mid-Continent and Chicago centers, were slightly off, due to the continued lack of sufficient domestic demand. The weakness of gasoline export markets was indicated in another reduction of a half cent by the Standard Oil Co. of New Jersey. Kerosene showed very little change in price, but was not offered as freely east of the Rocky Mountains as in previous weeks, due to lessened production. Fuel oils were steady to firm in all areas, but demand was not large. Gas oil was unchanged and distillates spotted, because of warmer weather cutting down consumption. Natural gasolines were universally soft, with marked price reductions in the Mid-Continent. Lubricating oils unchanged.

Mid-Continent—Refined markets marking time, pending expected crude reduction. Gasolines slightly off, but as whole prices steadier. Export cut in gasoline little felt, due to already low prices. Less kerosene available and quotations held. Fuel oils steady but demand inactive. Distillate inquiries off. Natural gasoline weaken quarter to half cent.

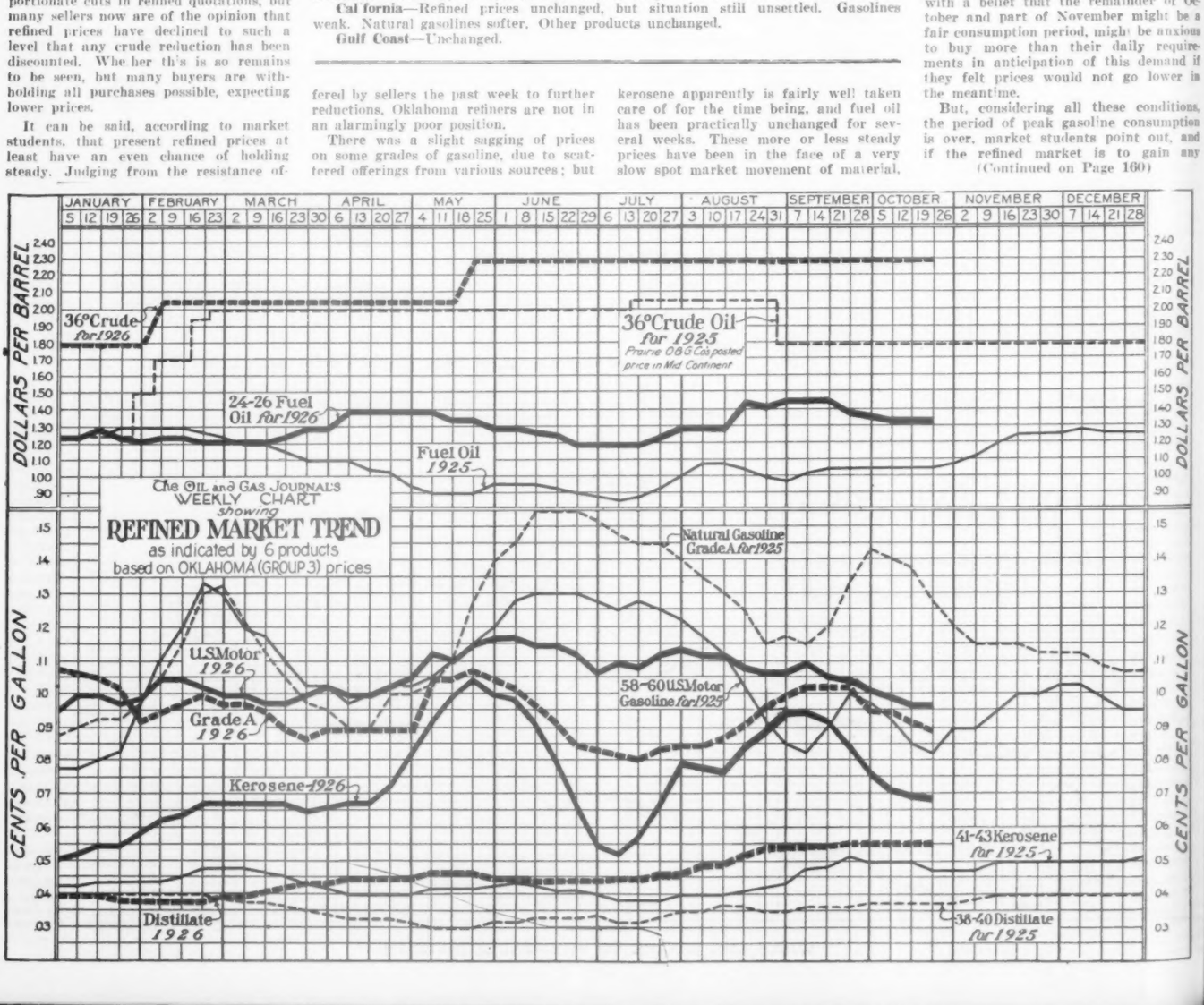
Atlantic Seaboard—Gasoline unsettled, due to California situation and tankwagon market. Furnace oil reduced. Kerosene steady. Gas oil and fuel oil in good demand. Lubricants unchanged. Wax down. Petrolatums improve.

Pennsylvania—Gasolines softer after tankwagon cuts. Kerosene in better demand, but still weak. Fuel oil holding own. Softer tone in bright stocks as refiners catch up on orders. Other lubricants unchanged.

Chicago—Gasoline slightly more active because of better weather. Kerosene quiet. Distillates still firm, but fuel oil continues to drag. Lubricants in fair demand.

Cal fornia—Refined prices unchanged, but situation still unsettled. Gasolines weak. Natural gasolines softer. Other products unchanged.

Gulf Coast—Unchanged.


JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER
DOLLARS PER BARREL
CENTS PER GALLON
36°Crude for 1926
24-26 Fuel Oil for 1926
Fuel Oil 1925
36°Crude Oil for 1925
Prairie O&G Co posted price in Mid Continent
The Oil and Gas Journal's WEEKLY CHART showing REFINED MARKET TREND as indicated by 6 products based on OKLAHOMA (GROUP 3) prices
U.S. Motor 1926
Grade A 1926
Kerosene 1926
Distillate 1926
Natural Gasoline Grade A for 1925
58-60 U.S. Motor Gasoline for 1925
41-43 Kerosene for 1925
38-40 Distillate for 1925

Sources of Our Increased Production

Thirty-three Pools Show Considerably More Production Than a Year Ago and Two of Them Averted a Petroleum Shortage

By James McIntyre

Two big fields developed in 1926 saved the industry from a petroleum shortage. Neither of the two pools was discovered this year but one of them, Spindletop, in Texas, was virtually a discovery as the large increase in production came from deep horizons not dreamed of a year ago.

If we include Spindletop as a product of 1926, we have ten new pools. Of these only one—Spindletop—is yet a very large producer, and it may have seen its best days. Another, Seminole, Okla., with 29,970 bbls. on October 1, is a coming field which may before winter show 70,000 bbls. a day more than its record on October 1. On October 16 it had climbed to 59,763 bbls., and there were 220 wells drilling.

On October 1 this year the daily production in the United States was estimated at 2,214,000 bbls. On October 1, 1925, it was estimated at 2,125,000 bbls This shows an increase of only 89,000 bbls. and the increase in the Spindletop Field very nearly represents the whole, and the increase in Hutchinson County, Texas, does even more as it was 25,000 bbls. a day In excess of the total net increase.

Thirty-three fields in the United States show an increase over a year ago of 425,966 bbls. Taking these out of the reckoning, the vast number of other pools stretching from Richburg, N. Y., into the Pacific Ocean itself, show a net decline in production of 336,966 bbls. a day. In this list of declining pools are all the famous pools of history save Spindletop and the more ancient Bradford Allegany district in Pennsylvania and New York, which latter is holding its own. It includes Long Beach, Santa Fe Springs, Huntington Beach, Burbank, Tonkawa, Powell, Mexia, Smackover and the others which have been in the limelight at one or another period in the past few years.

The sources of increased production in the United States on October 1, 1926, over that of October 1, 1925, include 20 fields in Texas. The others are in Montana, California, Kansas, Oklahoma, Louisiana and Arkansas. There may be more than 33 pools in the United States that show an increase over their production of a year ago, but it has been slight.

Hutchinson County Leads

Leading all the fields in the list was Hutchinson County in the Texas Panhandle, which produced 1,440 bbls. on October 1, 1925, and was credited with 115,400 bbls. on October 1, 1926. Spindletop was second with 89,500 bbls., as against 1,130 bbls. a year ago. These were the only fields showing a very large increase. The Ventura-Newhall Field (including Ventura Avenue), in California, was producing nearly twice as much oil on October 1 of this year as on the same date last year, and Seminole, Okla., which was discovered this year was producing 29,970 bbls. on October 1 this year and on the way to a production variously estimated up to 150,000 bbls., which it is expected to yield later in the year. Nigger Creek, Tex., with 13,000 bbls.; Urania, La., with 16,465 bbls. Lisbon, Ark., with 7,815 bbls.; Upton-Crane Counties, Texas, with 10,325 bbls.; Crockett County, Texas, with 1,130 bbls.; Jones County, Texas, just recently opened, and Cooke County, Texas, also a recent discovery, were not producing regions a year ago, and Sumner County, Kansas, was making 6,000 bbls. a day as against 20 bbls. a year ago. Wewoka, Okla., which was dropping slowly to a settled production basis, was revived by deeper drilling and the discovery of the Wilcox sand. The presence of Braman, Okla., in the accompanying list may be traced to the same cause as that of Wewoka. The discovery of an extension to the Ventura Avenue Field in California greatly increased the production of the general Ventura-Newhall district. Intensive development work in many Texas counties brought Boling and Mirando and the counties of Wilbarger, Brown, Upton, Crane, Montague, Shackelford, Gray, Carson, Mitchell, Coleman, Throckmorton, Crockett, Jones, Howard and Cooke Counties into the list of fields that show an increase in production.

SOURCES OF INCREASED PRODUCTION
Pools Showing Considerable Gain Over One Year Ago

	Production Oct. 1, 1926	Production Oct. 1, 1925
Hutchinson County, Texas	115,400	1,440
Spindletop, Texas	89,500	1,130
Ventura-Newhall, Calif.	56,000	28,200
Greenwood County, Kansas	50,000	45,375
Elk Hills, Calif.	34,814	27,000
Seminole, Okla.	29,970	None
Wewoka, Okla.	28,000	11,250
Sunburst, Mont.	20,000	11,500
Fullerton, Calif.	18,762	13,450
Mirando, Tex.	17,500	7,300
Braman, Okla.	19,700	13,300
Urania, La.	16,465	None
Wilbarger, Tex.	14,100	9,450
Nigger Creek, Tex.	13,000	None
Brown County, Texas	12,650	2,810
Payne County, Oklahoma	12,533	7,300
Upton-Crane Counties, Texas	10,325	None
Shackelford County, Texas	10,125	3,100
Montague County, Texas	8,325	310
Lisbon, Ark.	7,815	None
Sumner County, Kansas	6,000	20
Gray County, Texas	4,650	60
Lockport, La.	4,500	2,450
Carson County, Texas	4,300	2,635
Callahan County, Texas	4,200	3,350
Mitchell County, Texas	3,450	2,535
Boling, Texas	2,450	....
Coleman County, Texas	1,775	265
Throckmorton County, Texas	1,400	195
Crockett County, Texas	1,130	None
Jones County, Texas	700	None
Cooke County, Texas	450	None
Howard County, Texas	400	None
Total 33 fields	620,389	194,423
Total of all other fields	1,593,611	1,930,577
Total United States	2,214,000	2,125,000

	Bbls.
Increase in 33 fields	425,966
Decrease in other fields	336,966
Net increase in United States	89,000

Texas' New Fields

The largest net increase of any field in north and west Texas outside of the Panhandle was contributed by the Upton-Crane County area which was not listed in the production columns last year but which produced 10,325 bbls. October 1 this year. At this time in 1925, the discovery well of Johnston & McCamey on the Baker farm was just in process of completion but since then some excellent producers have been found over a strip of territory covering about 25 miles and embracing six separate pools as they now stand, although some of these may later prove to be connected. The best well completed during the year in this district, although not the largest initial producer was the Dixie Oil Co.'s No. 2 Hughes in the William Teer Survey, which flowed about 2,000 bbls. daily for several weeks and declined very slowly.

Crockett and Jones Counties were also absent from the production tables last year. The former now has about 1,100 bbls. of output daily, all of which comes from the pool opened in May, 1925, by the World Oil Co. which was bought out by the Humble Oil & Refining Co. and Marland Oil Co. Although discovered early in the year, commercial production was not obtained until late in 1925. Howard County produces about 400 bbls. now, chiefly from the Chalk land and from Fred Hyer's well, all in the southeastern part of the county. Jones County, of course, entered the lists just recently when the Phillips Petroleum Co. completed its sensational wildcat in the southwestern corner of the county.

Mitchell County's increase was due to a rather active development of the Westbrook Field, coupled with the staying powers of small wells in tht pool.

While Coleman County increased considerably, the county has proved disappointing, and the gain is far below expectations. The Dibrell Pool, about 10 miles northeast of Coleman, and shallow production in the northern part of the county, accounted for the increase.

Extensions to the Cross Plains Townsite Pool brought an increase in Callahan County. The Blake, or Dunn-Stover Pool, the discovery of the Fry Pool near Thrifty, and extensions to the Cross Cut Field, accounted for Brown County's increase. The Cook Ranch Pool, discovered February 18 this year, and several smaller discoveries, were responsible for Shackelford County's gain; and the Rock Crossing Field gave Wilbarger County its boost. Montague County has climbed from practically nothing to more than 8,000 bbls. as a result of intensive development of the Nocona Field, and Cooke County was added to the list of producing counties when a shallow pool was opened about 18 miles northwest of Gainesville during the summer, and another shallow pool discovered recently near Muenster.

Throckmorton County's increase is due almost entirely to one well, the Humble Oil & Refining Co.'s No. 1 Stubblefield, the original discovery well of the Masters Pool in the eastern part of the county. This well was deepened this year and came in for gusher production but has steadily declined and little else has been added to it. One other well in the same area, the Red Bank Oil Co.'s No. 1 Parrott, held up around 400 bbls. for a long time, but offsets were very small producers.

Oklahoma's Contribution

Only four producing districts in Oklahoma are in the list of fields which show an appreciable increase over the production of a year before. These are Seminolle, in Seminole County; the Braman district in Kay County (North and South Braman); Wewoka in Seminole County and pools in Payne County.

The Seminole Pool was opened by the Indian Territory Illuminating Oil Co., with a test in NW cor. SE. Section 24-9-6, which found a 1,100 bbl. initial production in the Hunton lime, which lies at an average depth of 4,000 feet in that area. This discovery was in April, 1926.

(Continued on Page 145)

PRAIRIE BUILDING STATIONS ON PANHANDLE LINE; PIPE SHIPPED

The Prairie Pipe Line Co. has started the construction of two stations upon its new pipeline system from the Texas Panhandle to Oklahoma. The Panhandle line, as it is generally called, is one of the most important operations in the nation's petroleum system today, for, by its completion, crude from the Texas Panhandle will have outlets to the north, south and east.

Connecting with the main north and south line of the Prairie system at Ringling, Okla., Panhandle crude may be pumped north to the markets in that direction, it may be pumped south to the Gulf Coast, and possibly be shipped by tanker to the Atlantic Coast refineries, and by transfer into the lines of the Oklahoma Pipe Line Co. at Ringling it may be transported eastward to the Standard of Louisiana Co.'s refinery at Baton Rouge, La.

The new Prairie line will cover a distance of 199.25 miles, and is being built from Kings Mill, Tex., where a tank farm is under construction to the Addington station west of Ringling, Okla., where the present line from Ringling terminates.

There is a tremendous amount of detail and preliminary work necessary to the construction of such a long line, and when it is considered that the total cost of constructing the line will be approximately $4,000,000, the extensive planning incidental to even making a start upon such a project will be appreciated.

Pipe Shipped for Line

During the past week, the pipe for the line was shipped from the mills at Pittsburgh, Pa., to Kings Mill. The pipe will be shipped at the rate of from 2 to 4 miles per day. It is plain end pipe of 40 foot lengths, purchased from the National Tube Co. The line is to be a welded line.

For the next two months the work will be concentrated on the west end of the line, owing to the unfavorable winter weather conditions at that point. It is desired to do as much as possible on the Panhandle end of the line before zero weather blocks operations.

Actual pipeline construction should start about November 1. It is the plan of the Prairie officials to keep all the gangs working simultaneously, the ditching gang

(Continued on Page 157)

Montana Needs Lower Freight Rates

Present Tariffs Work Hardship on Both Producers and Refiners. Refinery Crude Requirements Now Exceed Current Supply

By C. O. Willson

GREAT FALLS, Mont., Oct. 5.—The demand for Montana crude now exceeds the current supply, and stocks are being depleted.

The recent advances in the posted crude schedules for the Sunburst Field brought about by this relative situation in regard to crude supply and demand are expected to stimulate development work and result in increased production during 1927.

Despite the higher posted prices, several refineries are paying premiums for their crude supplies.

Lower freight rates on crude oil and petroleum products in both intrastate and interstate shipments are needed.

The foregoing statements summarize the Montana refining and marketing situation as obtained from representative oil men in this farthest north oil country of the United States. After a period of several months in which unexpected new production in the Sunburst area brought more crude than the limited refinery capacity could readily absorb, the situation is now reversed. As a result, while other fields have been faced with a possible downward revision in their crude schedules, the principal producing area of Montana during the past few weeks has had increases which total 30 cents a barrel.

No accurate figure is available as to the amount of crude oil being withdrawn from storage to meet the requirements of the refiners. In the case of the largest purchaser in the field, the withdrawal is said to be small. However, three or four of the refiners in the fields are drawing on their own storage. One refinery which has a large fuel oil contract is topping between 12,000 and 15,000 bbls. of crude daily and is drawing on its storage to maintain this large throughput.

Including the four Canadian refineries which obtain their supplies from the Montana fields, as well as the 14 Montana plants, it is estimated that at least 25,000 bbls. of Montana crude are being refined daily. Taking the top figure of the one refinery just mentioned, the actual figure is probably nearer 30,000 bbls. daily. The total production of the Montana fields is 21,000 bbls. daily at present.

This excess of demand over supply for Montana crude is expected to stop at least temporarily the plans of three or four more refinery organizations which have considered the possibilities of the Montana fields from the manufacturing standpoint. It is known that among these possible newcomers is one major refinery organization. With no surplus crude available and production gradually declining, it is practically certain that there will be no new refineries in the field unless through purchase of the plants already in operation.

Crude Situation

To those who have not followed Montana's oil development, it can be briefly summarized, because there was little to record previous to this year. In 1925 the production of the entire State averaged about 11,000 bbls. daily. The production which was not stored was refined by local refineries, the output of which was absorbed in the immediate territory without disturbing outside markets.

The first production of any size in the State was in the Cat Creek Field of central Montana. This is a valuable crude having a gravity of 49 degrees with a gasoline content from skimming of from 55 to 60 per cent. This field has been declining for some time, and its present production is 2,700 bbls. daily. The bulk of this production is purchased by two refineries located in the field.

The rapid expansion in the State's oil resources this year was due entirely to new production in the Sunburst Field. This field, which averaged less than 7,000 bbls. daily in 1925, due to the discovery of new producing areas increased rapidly, so that the average daily production the first six months of this year was approximately 17,000 bbls. During the peak producing period of the summer months, the production jumped to between 25,000 and 30,000 bbls. daily. It was necessary at that time to shut in some of the wells, due to the inadequate transportation and storage facilities.

Previous to the large production this year, the Sunburst posted price schedules were close to those of other fields for the same grade crude, a high of $1.55 being obtained for the field's production last year. However, this year when posted schedules were being advanced in other fields, the major buyers found it necessary to reduce the Sunburst schedules. The downward revision reached a low of $1.05 in May, a schedule which continued until August, when the first 10-cent advance took place.

Since that time there has been two additional 10-cent advances so that the present schedule is $1.35. The crude has an average gravity of 30 degrees A. P. I. The maximum gasoline recovery obtainable by skimming is 25 per cent, with the average of the Montana refiners around 22 per cent. The light end products—gasoline and kerosene—are difficult to treat to meet the usual specifications. Due to this fact, a large amount of high gravity distillate is made. This product is in demand as motor fuel for tractors.

Flush Production Off

The foregoing briefly explains past developments in the Sunburst Field. As previously explained, the production of the field has recently shown a steady decline, due to the falling off of flush production. As to the future of the field, there are as usual both optimists and pessimists, with the former, so far as this section is concerned, in the majority.

Operators within the State believe that recent developments in both crude and refined markets were never more favorable than at present. They blame the low prices of the summer months for the slump in production and are confident that the higher prices now prevailing will open up new pools which will be reflected in increased production during 1927. In this connection, it is pointed out that with the winter weather almost here, there probably will be no special activity before next spring.

This production situation is summarized here because it is the most important factor around which future developments in refining and marketing will depend. If production continues to decline or if it is only possible to maintain it at its present levels, no increase in manufacturing facilities is justified, and the field will never have any widespread importance in the marketing of petroleum products. On the other hand, it is certain that any trend in the opposite direction will be accompanied immediately by a similar expansion in refining and marketing.

FREIGHT RATES

The following table gives freight rates from Montana refining centers to representative intrastate and interstate consuming centers:

GASOLINE AND KEROSENE

	Rate per 100 lbs.	Rate per Gallon
Shelby to Billings, Mont.	$0.605	$0.0462
Great Falls to Billings, Mont.	.50	.0333
Shelby to Minot, N. Dak.	.70	.0462
Shelby to Bismark, N. Dak.	.70	.0462
Great Falls to Minot, N. Dak.	.70	.0462
Shelby to Spokane, Wash.	.725	.0478
Shelby to Chicago	.71	.0468
Shelby to Minneapolis	.95	.0627

CRUDE OIL

	Rate per 100 lbs.	Rate per Barrel
Sunburst to Minneapolis	$0.64	$1.92
Sunburst to Hillyard, Wash.	.365	1.13

RESIDUAL FUEL OIL (Great Northern)

	Rate per 100 lbs.	Rate per Barrel
Sunburst to Minneapolis	$0.375	$1.16
Sunburst to Duluth	.395	1.23

Marketing Situation

So far as marketing is concerned, the refineries in the State at present refine nearly all the gasoline needed for consumption within the State.

Based on reports made to the State, 12 operating refineries the first three months of this year refined 6,931,097 gallons of gasoline. This was only 566,789 gallons less than the total consumption of gasoline in the State for the same period. For the second quarter, the consumption was 12,207,099 gallons and the production 9,523,718 gallons, a difference of 2,673,381 gallons.

The bulk of gasoline is consumed in this northern State during the summer and early fall months. The third quarter of the year—for which State reports are not available at this time—will no doubt show a substantial increase in gasoline consumption. However, since the first half of the year, the Shelby Refining & Pipe Line Co. has started making finished gasoline at Shelby and the International Refining Co. has started making finished gasoline at its Sunburst refinery. The bulk of the output of the latter plant is still tops and fuel oil, but a small amount of gasoline is being made.

Some of the other plants increased their output during the third quarter, so it is certain that the total production of the State again came close to approximating the total consumption. During the winter months consumption is approximately 50 per cent of the summer consumption. This means that unless refiners curtail their operations this winter, production will exceed the State consumption.

Imported Gasoline

This situation is aggravated by the fact that there is still considerable gasoline brought into the State from Wyoming refineries. Before Montana became an oil State all the gasoline consumed was obtained from the Wyoming refineries, and a tankwagon and a retail price structure was established based on freight rates from the State, which adjoins Montana on the south.

As Montana refining developed, less and less gasoline was shipped from the Wyoming plants. However, the first quarter of the year 1,513,347 gallons of the 7,497,886 gallons of gasoline consumed in the State came from out-of-state refineries, and during the second quarter 3,657,645 gallons. About half of this gasoline was shipped in by the Continental Oil Co., the largest gasoline distributor in the State. This gasoline comes from the Glenrock refinery of the Continental and the Greybull refinery of the Midwest Refining Co. and the Standard Oil Co. of Indiana.

The Continental Oil Co. has no plant of its own in Montana, although it does take the entire output of the Lewistown Oil & Refining Co. at Lewistown. It also buys considerable gasoline from other Montana refiners. It so happens, however, that to certain parts of Montana the intrastate rate from the Sunburst group of refineries is more than the interstate rate from the Wyoming plants. This applies to a part of the southern half of the State. The Texas Company is another major company which takes advantage of this situation and ships large quantities of gasoline from its Casper, Wyo., refinery. In this connection, one refinery across the line in Canada, securing its crude supply from the Sunburst field, ships part of its gasoline production back into Montana for distribution in the State.

This company is the Maple Leaf Oil & Refining Co., which has a small skimming plant at Coutts, Alberta. This company buys tops or crude from the Montana companies. By this arrangement, the company does not have to pay the 1-cent import tax of Canada on gasoline shipments from the State in its Canadian distribution and can ship back into Mon-

(Continued on Page 145)

GAS IMPORTED BY OUTSIDE REFINERIES

	First Quarter	Second Quarter
Continental Oil Co.	$ 745,889	$1,999,226
Pure Oil Co.	700	.....
The Texas Company	696,758	1,230,579
Miscellaneous	70,000	100,000
Arro Oil & Refining Co.	.....	327,840
Totals	$1,513,347	$3,657,645

REPORT OF GASOLINE MANUFACTURED AND SOLD IN MONTANA DURING FIRST SIX MONTHS OF 1926

	First Quarter			Second Quarter		
Name and Address—	Total Manufactured	Total Exported	Sales in State	Total Manufactured	Total Exported	Sales in State
Absher Refineries, Kevin, Mont.	$ 6,885	.....	$ 6,885	$ 48,250	.....	$ 48,250
Arro Oil & Refining Co., Lewistown, Mont.	1,882,726	$792,151	1,090,575	1,989,766	$ 642,435	1,347,331
*Bluebird Oil & Refining Co., Butte, Mont.	25,000	.....	25,000	65,000	.....	*65,000
Hart Refineries, Missoula, Mont.	133,544	.....	133,544	220,374	.....	220,374
International Refining Co., Sunburst, Mont.				Started Production Third Quarter		
Lewistown Oil & Refining Co., Lewistown, Mont.	3,073,178	40,722	3,032,456	3,820,893	7,963	3,822,930
Big West Oil Co., Kevin, Mont.	194,663	.....	194,663	200,000	.....	*200,000
North American Oil Refining Trust, Kalispell, Mont.	13,646	.....	13,646	161,280	.....	161,280
Reliance Refining Co., Kalispell, Mont.	154,060	.....	154,060	267,372	.....	267,372
Silver Bow Refining Co., Butte, Mont.	130,000	.....	130,000	175,000	.....	*175,000
Snow Cap Oil Co., Sunburst, Mont.	14,350	.....	14,350	55,990	.....	55,990
Sunburst Refining Co., Great Falls, Mont.	862,102	8,178	853,924	1,944,995	323,866	1,621,129
Yale Oil Corporation, Miles City, Mont.	440,943	105,507	335,436	564,797	.....	564,797
Totals, 1926	$6,931,097	$946,558	$5,984,539	$9,523,718	$ 974,264	$8,549,454
Totals, 1925	5,064,526	974,314	4,090,152	8,766,346	1,549,451	7,217,895
	$ 27,816		$1,894,387	$ 757,172	—$ 575,187	$1,332,259
	$1,866,571					

*Estimate. Shelby Pipe Line & Refining Co. started operating third quarter.

Automatic Control Made Good Record

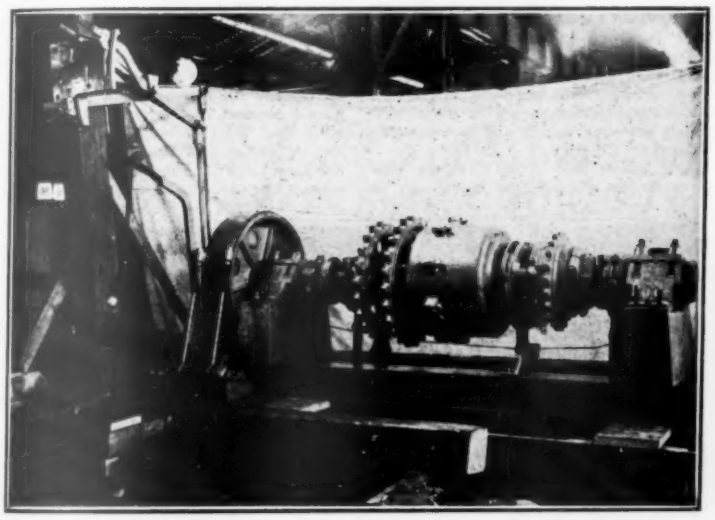
Device Given First Test in Rotary Drilling in Mid-Continent Expected to Become Standard Equipment

By J. L. Dwyer

The Halliburton automatic control used in drilling oil wells by the rotary system is novel and ingenious, and was amazingly efficient in its first Mid-Continent test. Should its standard of operation be maintained at the level at which it functioned in making its bow to Oklahoma, it is freely predicted that within three years this device will become standard equipment in rotary drilling operations.

The novel features of this control are that it minimizes the human element, that it has a dual control of the drilling movement, and that it at all times maintains a portion of the drill pipe string in suspension, thereby tightening the load of the string upon the bit, and permitting that implement to operate more freely upon the bottom of the hole.

The control is a separate unit, mounted upon its own frame, and set upon sills placed between the rotary engine, and the draw works. It is nearly as wide as the draw works, and in rigging it up on wells the sprockets upon the line shaft are moved to line up with the sprockets of the control. This sprocket arrangement is shown in the accompanying picture. The control may be used with any standard make of rotary equipment, without any changes other than the one mentioned above.



Automatic drawworks feed.

First Trial in Mid-Continent

The Magnolia Petroleum Co. placed one of these controls upon a well drilled to the Wilcox sand in the Wewoka Field of Seminole County, Oklahoma. This was the first appearance of the control in the Mid-Continent Field. It established an enviable record in its initial well, and drilled from the grass roots to the point where the cable tools are used (3,535 feet) in 31 days.

In addition to making a good run in drilling time, it is said that the control effected a considerable saving in the use of bits, for it only used 29 sets of Hughes rock cones, and 36 sets of Hughes disc bits.

According to Mr. Shaw, superintendent of rotary drilling for the Magnolia company, the control functioned splendidly, and due to the fact that it reduces the danger of "twist-offs," it will greatly minimize all fishing jobs. In recalling the action of the control, Mr. Shaw stated that, in his opinion, the features of the device are, the automatic action of the feed, and the fact that it never permits the bit to "ball up" to the danger point, but automatically raises the tools up off bottom until they are clear of the matter which is causing trouble; it washes the bit clean of all foreign matter, and then lowers the bit to bottom, and resumes drilling operations.

To the uninitiated, this seems a rather strong statement, but investigation of the control and its operation substantiate that that is exactly how it works.

The Halliburton control automatically maintains a uniform and constant drilling operation by inversely varying the feeding pressures applied to the bit to compensate for fluctuations in the resistance encountered by the rotation of the drill stem.

Power Through Two Paths

A predetermined torque is applied to and maintained on the drill stem, so as to increase the efficiency of the drilling motion, and eliminate the troubles caused by excessive strains placed upon the tools and the drill pipe. This is accomplished by applying the power to the drill stem through two paths; the power through one path placing a torque upon the drill stem, and the power through the other path regulating the feed pressure applied to the bit carried by the drill stem, and by diverting the power from one path to the other, to maintain the forces in the two paths in such balance that the driving torque will remain constant.

In ordinary rotary operations, the power from the engine is transmitted to the line shaft which is located immediately above the rotary draw works. The rotary machine is driven directly from the line shaft. The draw works are also operated directly from the line shaft. In ordinary rotary drilling all power is applied directly from the line shaft.

In using the Halliburton automatic control a double transmission of power is used. The control being located between the engine and the line shaft, one path of power is taken from the engine through the control to the line shaft which operates the draw works. The other path of power is taken from the engine to the control and then directly to the rotary machine which turns the string. The first source of power raises and lowers the drill string; the second rotates the tools.

For a more clarified explanation it might be supposed that a powerful automobile truck backed up to a rotary drilling rig and the wheels removed and suitable chain sprockets substituted. Suppposing the rotary chain were disconnected from the line shaft and connected to one of the sprockets. Then if the steam engine were disconnected and the other sprocket on the truck were connected to the line shaft, the arrangement would provide an automatic control.

Method of Operation

If this actually took place, and the bit were on bottom and the drum brakes released with the entire weight of the drill pipe resting on the bit, and then the engine started, it is very evident that the sprocket with the least resistance would start turning first. This would be the sprocket attached to the line shaft, which would turn the drum and start to hoist the pipe out of the hole.

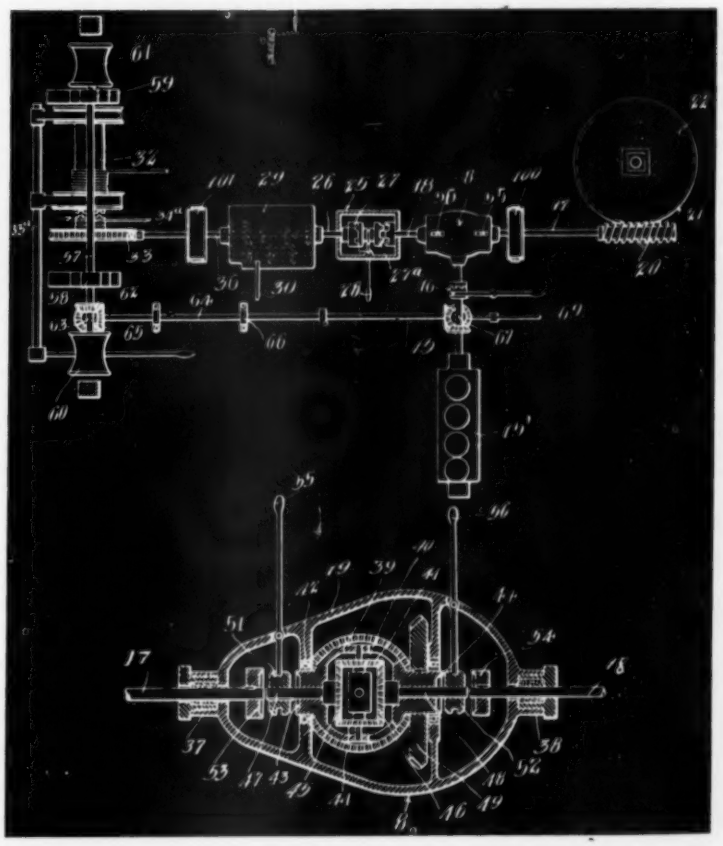
As the drum began to hoist the pipe, the resistance would increase, and before the entire weight of the string of pipe has been raised from the bottom of the hole, the resistance of the other sprocket will be reached by the hoisting drum, and an equilibrium will be attained. When an equilibrium is reached, the rotary sprocket becomes the moving side, and rotation begins, because it requires vastly more power to raise the entire string of pipe than to turn the rotary machine after some of the downward pressure on the bit has been relieved by suspending a certain amount of the upper portion of the drill pipe.

An easy comparison for the layman is to liken it to an automobile differential, for it operates exactly upon this principle. When an automobile is stuck in the mud, it is noticeable that the side which has the least traction upon the ground spins the most freely; and if one wheel be altogether free of the ground it will whirl unrestrained. When boards or rocks are placed under the wheel and the traction surface is built up, this condition is changed. It is a fact that the first Halliburton control was made in California, using the motor, transmission, and differential of an automobile truck.

The fact that the Halliburton control maintains a portion of the string of drill pipe in suspension is believed to be responsible for the greatest part of its success in operation. When the tools at the bottom of the drill string are compelled to support the entire weight of the column of drill pipe, and at the same time be subjected to the heavy pressure necessary to drive the rotary machine and "make hole," it will be realized that a very trying load is placed on the "Kelly" or drill stem, upon the drill collar, and finally upon the bit. When this load is lightened perceptibly, it is natural that the easier action of the bit will be more efficient, although sufficient weight is maintained by the portion of the drill string which is not in suspension to have a grinding effect upon the bit.

When Tools Hit Rock

Likewise, when the tools using the Halliburton control are troubled by pieces of rock or large quantities of shale falling into the hole, and their effect upon the tools is sufficient to necessitate a greater amount of power to turn the rotary machine than is required to lift the drill string up off bottom, the sprocket which drives the rotary side of the machine will be the side with greater resistance, and will become the inactive side, while the sprocket which drives the draw works will then become the moving side and will raise the entire string of drill pipe up off bottom.



Upper—Diagrammatic plan view of power and force transmission and associated parts.
Lower—Detailed section of the differential illustrated above.

(Continued on Page 157)

Hydrogen Sulphide in the Panhandle

Report on Investigation of This Gas in Borger District and in Reagan County and McCamey Fields

By W. P. Yant[1] and H. C. Fowler[2]

Hydrogen sulphide is probably the most toxic gas associated with crude oil. Hydrocarbon (petroleum) vapors themselves are harmful to the human system, but hydrogen sulphide, when present, is usually more important from the standpoint of health and safety. These conclusions were reached in an investigation of the toxic gases encountered in the transportation and refining of high-sulphur petroleum. The results of that investigation

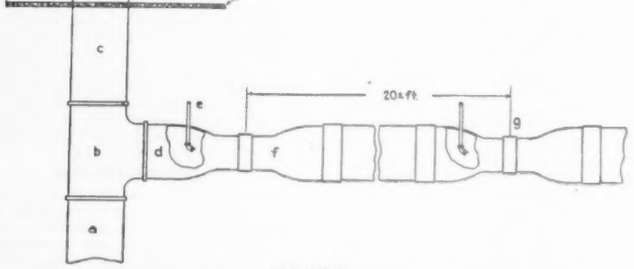


FIGURE 1.
Sketch of modified steam jet for use at well making large quantities of gas.

are presented in Bureau of Mines Bulletin 231[3]. Although the writers of Bulletin 231 paid no direct attention to the production of oil in the field, they attributed to hydrogen sulphide reports of accidents caused by gas in the oil fields of Mexico.

During the development of oil fields in Texas, a "poison gas" was encountered that constituted a decided health and safety hazard. The present report discusses and investigation of this gas made in July, 1920. The major portion of the investigation was conducted in the Panhandle Field of Texas, but the study also includes the Big Lake and McCamey fields.

The work undertaken in each field included:

1. Examination of the gas coming from representative wells at various locations in the field; also analyses of the gas-air mixtures to which the workmen were or might be exposed.

2. Observation of symptoms of poisoning and severity of these symptoms.

3. Observation of the conditions of exposure that produced the symptoms.

4. Study of ways and means of protection and prevention.

The whole survey was made to determine general conditions relative to the hydrogen sulphide hazard in the three fields rather than a detailed study of individual properties. However, representative data were gathered and from these findings, recommendations have been made that should help reduce the hazards in these and similar fields.

The prevailing conditions in the Panhandle, Big Lake and McCamey fields were similar to those reported in Bulletin 231. The characteristic odor of hydrogen sulphide could be detected almost anywhere in the field; also there was a pronounced darkening of white lead paint on houses, of brass valves and fittings, and of silver money. The symptoms caused by this gas—both acute (as unconsciousness) and subacute (as eye and respiratory tract irritation)—were identical with those produced by hydrogen sulphide. With the exception of slight gasoline-vapor intoxication and the possible existence of gas-air atmospheres containing an insufficient amount of oxygen to support life, no indications of other toxic gases were noted. The examination of the gases and gas-air were therefore confined to analyses for hydrogen sulphide content.

Site of Investigation

The Panhandle Field was too large to be covered completely during the period of this investigation. The study was confined to an area approximately 20 miles in diameter, about 50 miles northeast of Amarillo, Tex., with the town of Borger as its central point. Rarely, if ever, has the geology of a field had such a direct bearing on its safety problems as in the Panhandle Field.

There are two main producing zones in this area, the "granite wash" and the "lime." The active development in the granite wash formation appears to be confined to a relatively small area several miles south of Borger, while the present extensive drilling campaigns in the territory east, north and northwest of Borger are in what appears to be a limestone formation.

A uniform water table underlies this field at about sea level. The oil production zone is 100 to 300 feet above this water table, and the big flow of gas is encountered about 100 feet above the oil. The surface elevation varies from 2,900 to 3,200 feet above sea level.

The estimated initial flow of gas for wells on the south side of the Canadian River is from 4,000,000 to 20,000,000 feet per day. Some wells undoubtedly make more than this amount. North of the river, the flow has been much less. The initial rock pressure is about 450 pounds per square inch and is noticeably uniform.

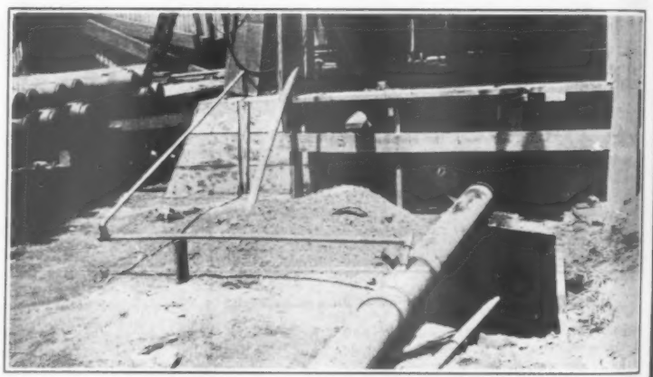
How much gas actually occurs dissolved in the oil and how much may be in the oil because of gas leaks around the bottom of the casing was not determined. The amount of hydrogen sulphide in the gas coming with the oil, as determined from samples taken in flow tanks, is quite similar to that in the upper "big gas" from nearby wells where samples were taken before the oil was encountered.

General Drilling Practice

Cable Tools.—Nearly all of the wells are being drilled or have been drilled by the cable tool method. There were only two rotary drilling outfits in operation in the field covered by this report, and it was understood cable tools would be used to complete these wells.

Holes Drilled Dry Because of Bentonite.—Certain formations in this field contain bentonite. According to Ladoo[4], this mineral has the property of taking up seven times its own volume of water and sometimes expands to more than six times its original volume. For this reason, the formations in the Panhandle Field cause a great deal of drilling trouble when they become wet. Tools stick in the hole as a result of caves or "mud rings," and strings of casing are liable to become "frozen." This condition makes it inadvisable to load the holes with water or mud when drilling through the gas zone, and most of the holes are drilled "dry." As a result many derrick floors, and the ground for a considerable area around the derricks, are covered with fine white cuttings. Frequently when "pulling out," a cloud resembling smoke almost hides the derrick from view. The drilling crews are often inconvenienced by particles of this material getting into their eyes. These particles, however, act merely as foreign bodies

(Continued on Page 118)



Eight-inch exhaust line with one-inch steam jet used to keep H_2S gas off derrick floor. The cellar runway is of very poor construction.

[1]Associate chemist, Pittsburgh Experiment Station, Bureau of Mines, Department of Commerce.
[2]Petroleum engineer, Bartlesville Experiment Station, Bureau of Mines, Department of Commerce.
[3]Sayers, R. R., and others, Investigation of toxic gases from Mexican and other high-sulphur petroleums and products; Bulletin 231, Bureau of Mines, 1925, 108 pp.

[4]Ladoo, R. B., Bentonite; Bureau of Mines, Reports of Investigations, October, 1921, Serial No. 2289.

TABLE 1.—TOXICITY OF H_2S ON MEN (COMPILED FROM THE WORK OF LEHMAN AND THE WRITERS OF BUREAU OF MINES BULLETIN 231)

H_2S %	0 to 2 minutes	2 to 15 minutes	15 to 30 minutes	30 minutes to 1 hour	1 to 4 hours	4 to 8 hours	8 to 48 hours
0.010		Coughing; irritation to eyes; loss of sense of smell.	Disturbed respiration; pain in eyes; sleepiness.	Throat irritations.	Salivation and mucous discharge; sharp pain in eyes; coughing.	Increased symptoms*.	Hemorrhage and death*.
.015							
.015		Loss of sense of smell.	Trachea and eye irritation.	Eye and trachea irritation.	Difficult breathing; indistinct vision; light shy.	Serious irritating effects.	Do*
.020							
.025		Irritation of eyes; loss of sense of smell.	Irritation of eyes.	Painful secretion of tears; weariness.	Light shy; nasal catarrh; pain in eyes; difficult breathing; pain in head; injection of conjunctiva.	Hemorrhage and death*.	
.035							
.035		Irritation to eyes; loss of sense of smell.	Difficult respiration; coughing; irritation of eyes.	Increased irritation to eyes and nasal tract; dull pain in head; weariness; light shy.	Dizziness; weakness; increased signs of irritation; and death*.	Death*.	
.045							
.050	Coughing; collapse and	Respiratory disturbances; irritation to eyes; difficulty of respiration*.	Serious eye irritation; light shy; palpitation of heart; few cases of death*.	Severe pain in eyes and head dizziness; trembling of extremities; great weakness and death*.			
.060	unconsciousness*.						
.060	Collapse*;	Collapse*;					
.070	unconsciousness*.	unconsciousness*; death*.					
.070	Do	Do					
.080							
.080	Do	Do					
.10							
.10	Do	Do					
.18							

*Data secured from experiments on dogs, which have a susceptibility similar to men, according to Lehman in Archiv fur Hygiene, vol. 14; 1892, pp. 135-189.

A Newton Portable Gasoline Plant Breaks All Records!

Makes 20,000 Gallons Per Day

A standard Newton Portable Plant, installed by the Independent Oil & Gas Company on their Fixico lease, Section 26-9-6, near Seminole, Oklahoma, is establishing new records for volume manufacture.

This plant is rated by us at 4,500 gallons, but on this lease it has made as high as ***20,000 gallons!***

Operating on the gas supplied by four wells in the Wilcox sand at an average level of 4,100 feet, it is astounding all who know its record with its flexibility and capacity. Not the slightest trouble has been experienced with the operation of the Newton Plant.

This instance serves to illustrate our claim that the NEWTON PROCESS IS THE PROFIT PROCESS. Write any of our representatives for further information.

REPRESENTATIVES

HURLEY BROTHERS
Kennedy Bldg.,
Tulsa, Oklahoma

THE NATIONAL SUPPLY CO.
General Offices,
Toledo, Ohio

FOREIGN:
The National Supply Corp.,
120 Broadway, New York

NEWTON PROCESS
MANUFACTURING COMPANY
FULLERTON, CALIFORNIA

The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

Published Weekly by
THE PETROLEUM PUBLISHING COMPANY
114-116 West Second Street
TULSA, OKLA.

Established as an International Publication in 1910 by Patrick C. Boyle

President - - - - - - - - - - - - Frank T. Lauinger
Vice President and General Manager - - Robert W. Egan
Secretary-Treasurer - - - - - - - - - - W. T. Bryan
Editor - - - - - - - - - - - - James McIntyre
News Editor - - - - - - - - - Andrew M. Rowley
Associate Editor - - - - - - - - - W. T. Anderson
Refinery Editor - - - - - - - - - - C. O. Willson
Technical Editor - - - - - Charles K. Francis, Ph.D.
Advertising Manager - - - - - - - - Clarence Morris
Circulation Manager - - - - - - - - J. P. Mulkern

DISTRICT ADVERTISING OFFICES

C. L. CAIN - - - 30 Church Street, NEW YORK CITY
E. KLAPPENBACH, 1328 Peoples Gas Bldg., CHICAGO, ILL.
C. F. TOPE, 421 Union Mortgage Bldg., CLEVELAND, OHIO

TERMS OF SUBSCRIPTION
(By Mail, Postage Prepaid)

Single copies - - - - - - - - - $ .15
Three months - - - - - - - - - $2.00
Six months - - - - - - - - - - $3.00
One year (in United States) - - - $6.00
One year (in Canada) - - - - - $7.00
One year (foreign countries) - - - $7.00

ADVERTISING RATES ON APPLICATION
Telephones: 6291-6292-6293
Remittances by Checks, Drafts, Express or Postal Money Orders should be made payable to
The Petroleum Publishing Company
Cable address, "Oilgasnal"

MEMBER AUDIT BUREAU OF CIRCULATIONS

THE ENGINEERS' MEETING

The eager interest and analytical discussion brought out by the papers read at the two days' sessions of the Petroleum Division of the American Institute of Mining and Metallurgical Engineers at Tulsa were impressive proof of the earnestness with which the oil industry is concerning itself with the conservation of its natural resources.

Time was, perhaps, in the earlier days when discussions at meetings of engineers, geologists and chemists were looked upon by old-time oil men as theoretical, if not impractical, But not today.

The industry is more and more turning to its technical and scientific men for guidance because they have proved their utility in both the producing and manufacturing ends of the business. They have established facts and demonstrated methods undreamed of in the practical philosophy of the pioneers.

They are no longer retainers, but leaders.

We have hardly yet adjusted ourselves to the effects of the evolution of refining which has so amazingly increased the recovery of gasoline from crude as to be the equivalent of the addition of a 125,000-barrel field to our daily production. The signs at this meeting of the engineers suggest that the producing division of the industry may be on the eve of improved methods of crude recovery as important as the achievements in refining progress.

It was relatively only yesterday that deeper drilling was the main topic among producers. Today it is increased recovery, not alone, as it started, from old fields, but from new wells.

Study of the principles in the movement of oil and gas underground is revealing factors that are being applied to the production of oil with actual demonstration of increased recovery by more scientific methods.

The Tulsa meetings of the petroleum engineers were devoted largely to consideration of this phase of practical conservation. The effect of dissolved gas on the viscosity and surface tension of crude oil, the relative efficiencies of air and gas, the possibilities in the soda ash method, the information gleaned from Mr. Heltzel's paper in the Pipeline Number of The Oil and Gas Journal on fluid flow in pipelines and its application to the study of the flow of oil through sands, were instructively debated.

Interspersed with this discussion of the purely technological problems were references to the economic and administrative problem of unit operation. But beyond illustrating the advantages of ideal operating conditions the technologists wisely, as one of them said, merely presented that theory and left it to the province of others to "bell the cat."

This is good judgment. The first essential is to enlighten and convince the industry of the practicability of increased recovery by the improved methods. The application will then become an economic and administrative problem to be worked out by the industry itself as best it can.

There is no industry in the world more responsive to helpful innovations, more eager for improvements. Unlike most industries with an assured and relatively stable supply of raw material the oil industry is continually concerned about its future production of crude.

Unable under former methods to extract more than 15 or 20 per cent of the oil in the ground, it has been forced to constant search for new sources. Its technologists believe they have found ways to increase the recovery from both old fields and new wells. They have convinced leading producers of its possibility and their theories are being tested in practice.

It is no exaggeration to say that the question of increased recovery from new wells and old fields is today the most interesting topic among producers.

As one of the speakers well said: "The use of improved devices and equipment, coupled with more mature knowledge of underground conditions and of well production methods, will undoubtedly lead to a more careful and scientific handling of individual wells and greatly prolong production. The demand for crude, together with increasing prices, will make possible the adoption of improvements in present practices that should put on the market in many areas an amount of oil two or three times in excess of that already produced."

This is the oil industry's contribution to conservation which aims at actual results by actual work.

The industry needs no spur to conservation. Its own self interest is a sufficient incentive. The intensely competitive conditions of modern industry prohibit waste of resources and demand the highest efficiency to succeed.

Every aid that experience can offer or that science can suggest is welcomed. Men technically trained are being enlisted and encouraged to take up the study of petroleum. No one could attend the sessions of the petroleum engineers in Tulsa without being deeply impressed with the earnestness and even enthusiasm with which that study is being pursued. One felt that these men were not only interested but fascinated with their work.

And surely there is no work more fascinating nor more helpful to mankind than the penetration of the mysteries of Nature.

OIL CITY'S LOSS

Oil men throughout Pennsylvania and indeed the Eastern Fields, and many who went out from the birthplace of the petroleum industry to develop fields in other sections and countries, will read with regret of the death of Howard R. Merritt, which occurred at his home in Oil City, Pa., the past week.

During the entire 44 years of his active business career, Mr. Merritt was connected with an institution that was closely identified with the operations of the oil industry. As an oil country banker, he came to know both oil men and the oil industry intimately, the soundness of his judgment making his counsel much sought, while the wide friendships he enjoyed testified to the esteem in which he was held.

He had been for 16 years treasurer of the institution which he entered as a messenger in 1882, as a boy of 15, when he was chosen its president six years ago. Born in Oil City and spending his whole life there, he had been a leader in the activities of his native city, proud of its traditional place in one of the world's greatest industries, and keenly interested in oil and gas development. His unexpected departure will be a severe loss to Oil City and a personal bereavement to those who treasured his friendship.

Built along heavy, rugged lines, Dresser Steel Pipe Couplings are noted for their strength and flexibility. The Middle Rings are hammer-welded and the Flanges are pressed from solid plate. Split centers are unheard of, and the Flanges have no weak points or welds to separate. They are regularly equipped with heavy section standard gasoline-resisting rubbers.

S. R. Dresser Manufacturing Co.
Bradford, Penna.

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

The Question and Answer Department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

CORRECTING LUBRICATING STOCK FOR ACIDITY

A lubricating oil was found to contain acid; this oil was again put through the stills and the impurities removed. Would this second run have any bearing upon the quality of the oil or is this the custom? Could the oil have been purified by filtering through fuller's earth?—W. E. G.

It depends upon the nature of the acid, that is, whether it was of organic origin or sulphuric acid which was not completely washed out after treating. The fact that the oil was freed from the acid suggests that the acidity was caused by traces of sulphuric acid being left in the oil. The organic acids, that is acids which are sometimes found in certain crudes, often persist throughout the distillates, which may be separated.

The second running need not have injured the oil so far as viscosity, flash and pour were involved, but may have improved it because the reduction was very likely not carried to completion and the color should have been improved if there was no burning of the oil.

It is not the custom to rerun oil for this kind of trouble, but to wash it and neutralize the acid with an alkaline solution. Fuller's earth will sometimes remove traces of acid, but it is considered a better practice to take care of the acid before it leaves the treating department.

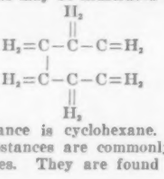
OLEFINES AND NAPHTHENES

Will you give me a simple explanation as to the structure and character of the substances called olefines and naphthenes? —R. D.

The olefines are unsaturated hydrocarbons of what is known as the ethylene series. They get the name from the first, or lowest, member of the series, ethylene, which is also known as olefiant gas, and is presented by the chemical formula C_2H_4. They are said to be unsaturated because the possible maximum quantity of hydrogen is not present in the molecule. The element carbon is considered to have four points for saturation by hydrogen, for example, for each atom. Thus we have CH_4 and C_2H_6, etc. When more than one carbon atom is present one of the four points from each carbon atom is satisfied by union to another carbon atom, then in the case of the first olefine it is clear that there are two atoms of hydrogen missing.

While the napthenes are more conmplicated, so far as an explanation of their structure is concerned, it may be that a reference to one of these compounds will serve the purpose.

Starting with the compound methane, CH_4, a long series of saturated compounds are known, in fact they constitute the common or best known hydrocarbons. They increase in regular and definite order so that for one atom of carbon added there are two of hydrogen. When the hydrocarbon containing six atoms is reached, the formula is C_6H_{14} and it is known as hexane. Its gravity is 83.5 A.P.I. and it boils at 156 degrees Fahrenheit. It is present in gasoline. There is another compound, which is fully saturated, that upon analysis is found to correspond to the formula C_6H_{12}. It has a gravity of 50.8 A.P.I. and boils at 178 degrees Fahrenheit. As this is a saturated compound and contains two atoms of hydrogen less than hexane, its structure must be represented as showing the carbon atoms arranged in a ring and two atoms of hydrogen attached to each atom of carbon, as may be illustrated by



This substance is cyclohexane. It and similar substances are commonly known as napthenes. They are found in some petroleums.

BENTONITE

What is the nature of the earth called bentonite; is this a special trade name for fullers earth?—E. M.

Bentonite is the name of a mineral which is found in California and Canada. It is earthly but not a fullers earth.

Two analyses of a kind of bentonite were given in the Engineering and Mining Journal, May 22, 1926. As they were very similar one will serve to show the general composition of this material.

	Per Cent
Silica	50.30
Alumina	15.96
Ferric oxide	0.86
Lime	1.24
Magnesia	6.53
Alkalies	1.64
Moisture	23.61

The Canadian Department of Mines has given an extensive description of the properties of bentonite and the various uses made of it in addition to the important use it has in the contact process of treating and filtering lubricating oils.

It is described as a clay substance the individual particles of which are so small that they are invisible under a high powered lense. They are not crystalline, like ordinary clay particles, and, when mixed with an excess of water, form what are called hydrosols—that is, permanent suspensions from which the clay will not settle. By virtue of the relatively enormous surface presented by the particles, bentonite possesses great adsorptive power, and the dry clay will take up many times its volume of water, swelling to a sticky, jelly-like mass. The particles have the property of adsorbing chemical compounds also, such as salts, dyes, etc. from solution, and of effecting base exchange between salts of the alkali and alkali earth groups. These properties have suggested a very wide field of usefulness for bentonite in industry. Some of the more important of these uses are: as an adsorbent of dyes; to increase the strength of cements and plasters; as a suspending agent for enamels and glazes in the metal enamelling and ceramic industries; as a bonding agent in crucible bodies, electrical and chemical porcelain, and abrasive wheels; as a dewatering agent for petroleum, gasoline and oils generally, as well as for air and gases; as a mordant and as a base for lake colors in the dye and color industry; as an accelerator and stabilizer of emulsions of various types, and in the preparation of asphalt, coal-tar residues, and pitch emulsions; as an absorbent of nitroglycerin in the manufacture of dynamite; as a filler material for fertilizers, and for paints, rubber and moulded composition products of various kinds; as a suspending agent in core washes for foundry work, and as a bonding agent in moulding sands; as a sticking or spreading agent in insecticidal sprays and dusts, and to increase the wetting power of cattle dips; as an ingredient of lubricants; in cold water paints; as an ingredient of adhesive pastes; as a sizing agent for textile, cordage, etc.; as an ingredient of crayons, indelible pencil leads and pastel colors, and of printers' inks; for increasing the retention of china clay in the manufacture of paper, and for removing the carbon black particles in the de-inking of newsprint; to remove the impurities from petroleum, gasoline and lubricating oils, as well as from packing house products and vegetable oils (acid-treated clay in contacting); to replace whiting in putty; as a source of pure colloidal silica, or silica gel; as a detergent in soaps and scouring compounds; as an ingredient in stove polish; in pharmaceutical products, cosmetics, facial clays, etc.

HEAT VALUE OF FUEL OIL

Will you kindly furnish the formula by which one may calculate the heating value of fuel oil from the gravity? Is this reliable when compared with an actual determination?—W. F. B.

This method makes use of a constant, 18,650, to which is added the product of the A. P. I. gravity less 10 multiplied by 40, which in itself is too high should there be a large quantity of incombustible matter present.

The formula may be stated as follows: B.t.u. per pound = 18,650 + (A. P. I. gravity − 10 × 40).

The gravity should, of course, be read and corrected to 60 degrees Fahrenheit before being used in the formula.

The thermal units contained in one pound of 20 A. P. I. fuel oil would, according to this formula, be calculated thus

20
10
---
10 — 18,650
40 — 400
---
400 — 19,050 B.t.u. in one pound of 20 A. P. I. fuel oil.

An actual determination in a bomb calorimeter of an oil of 20 A. P. I. gravity gave 19,100 B.t.u. per pound. This is quite close and may compare very well with duplicate determinations by different persons. Frequently the formula will give results some 400 or 500 B.t.u. too high, but for all practical purposes the formula appears to be satisfactory.

KEROSENE FOR DENATURING ALCOHOL

What is the proportion of kerosene which is used for denaturing alcohol? Is the quantity used for this purpose very large, that is, may the demand be great enough to influence the price of kerosene?—C. W. G. and others.

We have no information showing the quantity of kerosene used for denaturing.

Answering several inquiries for information about this matter, the recent announcement of the Treasury Department is given in full:

The new specifications for making alcohol impossible as a beverage revise denatured alcohol Formula No. 5. One of the new formulas, designated as Option No. 2, is to become obsolete April 1, 1927, and denaturing under Formula 5 will continue thereafter under Option No. 1.

Brig. Gen. L. C. Andrews, assistant secretary, who directed the preparation of the formulas, declared orally that the two methods now proposed to be made effective at the first of the New Year, contained nontoxic ingredients, but that the material used in them was of such a character "that no human being could detain the stuff in his stomach."

These options, according to General Andrews, were devised by Dr. J. M. Doran, head of the industrial alcohol division of the prohibition unit, and have been subjected to a long series of tests to determine their availability for the purposes to which they are being put. General Andrews was convinced that the new formulas will do all that is expected of them.

Formulas Are Described

The full text of the announcement, in the form of a decision (T.D. 3929), is as follows:

To Collectors of Internal Revenue, Prohibition Administrators and others concerned:

Effective January 1, 1927, completely denatured alcohol formula No. 5 will be compounded according to either one of the following formulas:

After April 1, 1927, it will be compounded only according to the first one of the stated formulas:

Option 1

100 parts of volume, ethyl alcohol, not less than 160 degrees proof.
4 parts by volume approved methanol (wood alcohol.)
0.75 parts by volume of the compound or one similar thereto known as Aldehol Grade A.
0.5 parts by volume approved kerosene.

Option 2

100 parts by volume ethyl alcohol, not less than 160 degrees proof.
4 parts by volume approved methanol.
0.25 parts by volume approved pyridine bases.
0 50 parts by volume approved kerosene.

Specifications for aldehol Grade A or compounds similar thereto: A product of the oxidation of kerosene having the following characteristics:

Specific gravity: Not over 0.825 or 40 A.P.I., at 60 degrees Fahrenheit.

Distillation range: When 100 cc are subjected to distillation in the same manner and apparatus specified for determining the boiling point of methanol, not less than 20 cc will distil over under 200 degrees Centigrade, and not less than 95 cc will distill over under 290 degrees Centigrade.

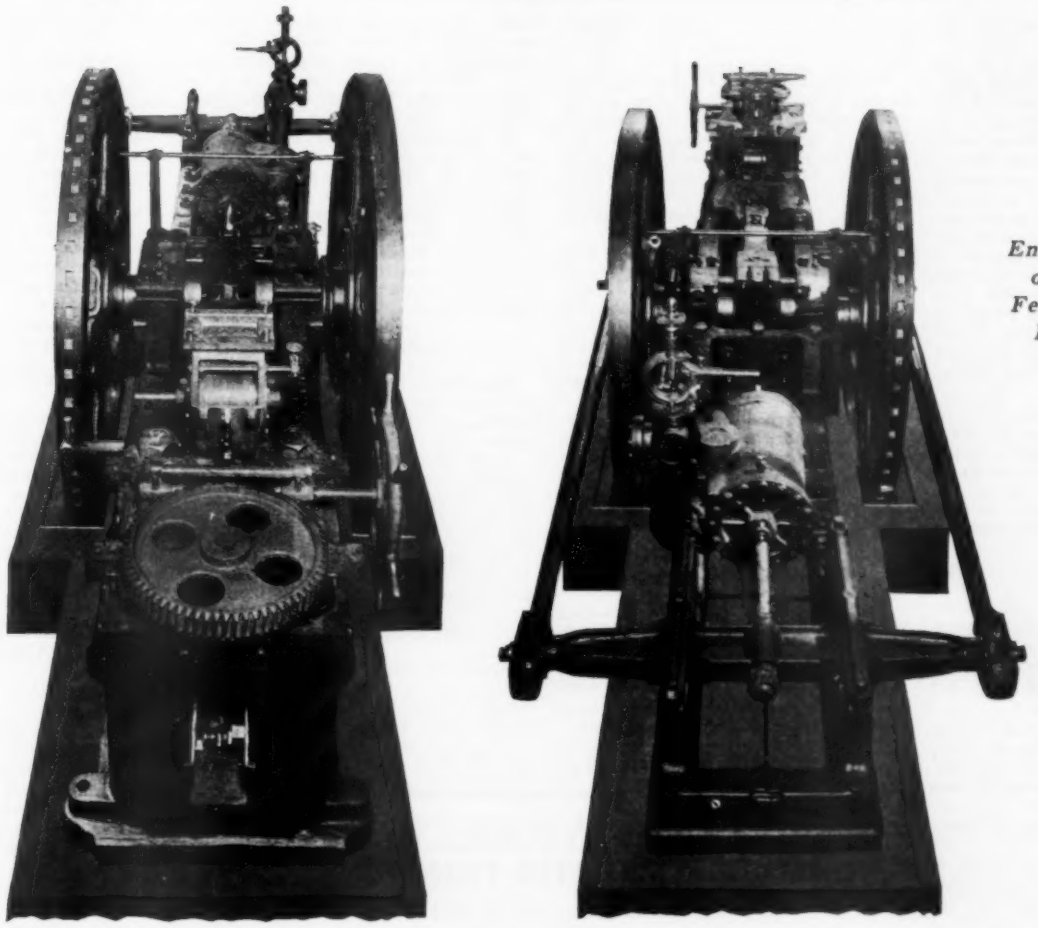
Behavior with Schiff's reagent (aldehydes): Ten cc of the liquid with 15 cc of Schiff's reagent must show decided violet color within 30 seconds after addition and agitation.

Solubility in 90 per cent ethyl alcohol: When 10 cc of the liquid is placed in a stoppered cylinder, graduated to one-tenth of a cc, an equal quantity of 90 per cent ethyl alcohol added and the contents shaken and allowed to stand, the alcohol layer will measure not less than 12 cc.

Iodine number: The iodine number shall not be less than 35.

The sample submitted for approval shall have the characteristic odor and color of the standard sample sent to the authorized chemist.

Briquetting Simplified



End views of the Fernholtz Press

Fernholtz Briquetting Process Assures Steady Profit to Refiners

Fifteen years of constant study and testing has resulted in the perfection of the Fernholtz Process. Every refinery with a daily output of 20 or more tons of oil-coke can earn more profit by its installation.

Ask for Catalog

PORTER & COMPANY, Incorporated

Briquetting Engineers

718 Board of Trade Bldg., Los Angeles, Calif.

Seminole Dominant Feature of Week

Pine Island and Louisiana Gulf Coast, With Sunburst Field, Montana, Report Significant Completions

The peak of production in the Seminole Pool, Oklahoma, is expected within 45 days and by the close of this week its output will probably reach 75,000 bbls. There are 60 wells drilling below 3,000 feet. Over 50,000 bbls. of the total production is coming from the Wilcox sand and the balance from the Hunton lime.

Crane and Upton Counties are holding the limelight in west Texas. Independent Oil & Gas Co.'s well made 52 bbls. an hour, 10 per cent water and 30 per cent b.s. Crane County is expected to be up 1,000 or 1,500 bbls. next week due to deepening of wells by the Gulf company. In Wichita County the Turbeville Pool is boosting production close to the record of Burkburnett days and may pass it next week. Montague County production has passed 9,000 bbls.

In the Carolina-Texas gas field in Webb County, southwest Texas, the Magnolia company's No. 1 Webster is standing 1,300 feet in pure oil of 42 gravity at 3,049 feet. It is 400 feet west of the Associated Carson discovery well, the only producer in the field which is producing at 2,000 feet, making 36 gravity oil.

A wildcat near Cut Bank, Glacier County, Montana, about 7 miles west of the Sunburst Field and 30 miles south of the Turner Valley, Canada, field, struck a gas flow estimated at 6,000,000 feet. The Ellis sand, the main oil-producing horizon, should be found about 300 feet below the present depth.

The largest well ever found in the Sunburst Field is reported by the Bowbells company east of the main field. The well is flowing wild, but estimates run from 3,000 to 5,000 bbls.

A new Turner Valley well is producing 100 bbls. of crude naphtha.

The Texas Company's No. 1 Curtis, in the Pine Island district of Louisiana, which made 235 bbls. an hour for the first five hours, after being allowed to flow open had dropped to 125 bbls. an hour Monday. The Magnolia company's No. 1, north offset, is flowing 600 bbls. a day.

A new deep field has been opened in the Gulf Coast division in Louisiana, where the Pure Oil Co. drilled in the deepest coastal producer in Cameron Parish, flowing 750 bbls. of 30 gravity crude.

Hope of Spindletop extension was revived by a 1,500-bbl. producer southeast of the Rio Bravo lease.

In California Huntington Beach, Ventura Avenue and Seal Beach are expected to increase production before the end of the year.

OKLAHOMA

In the Seminole Field, the Pure Oil Co.'s No. 2 Strothers, NE SE SW Section 26-9-6, reached the sand at 4,058-61 feet, struck the big pay at 4,063-65 feet, and at 4,070 feet was making 425 bbls. an hour. Production of the Seminole Pool on Wednesday morning of this week was approximately 71,000 bbls.

West of the Seminole Pool in Seminole County, the Gypsy Oil Co.'s No. 1 School Land, NE cor. NE SE Section 16-9-5, is flowing 100 bbls. every 12 hours from what is thought to be the Wilcox sand, 4,260-63 feet. The well is shut down pending the erection of tanks.

The Magnolia Petroleum Co.'s No. 1 Sparks, NW cor. SW Section 11-9-5, scratched a sand at 3,490 feet, and flowed 182 bbls. the first 12 hours. This well is also west of the Seminole Pool.

The following Oklahoma pools showed a daily average production for the past week:

Field—	Wells	Production
Davenport	269	5,663
Stroud	67	1,931
Skelly ville	30	1,130

The Gulf Pipe Line Co. has completed its new 8-inch line from Grayson station in Okmulgee County to the Seminole Field in Seminole County, Okla. The completion of the new Gulf line is very important to the producers having properties in this field, and it will afford great relief to the already crowded pipeline situation.

Outside of the Oklahoma Pipe Line Co. there is not a purchasing company in the Seminole Field possessing a single additional barrel of capacity, and the Oklahoma company is close to its limit.

The Gulf line to Seminole is an 8-inch screw line, and when in operation it will have a capacity of approximately 20,000 bbls. daily.

Remarkably good time was made in laying the line, for the entire 22 miles of its distance was built in 30 days. Most of the 30 days were marked by unfavorable weather conditions, and the terrain of the field around Seminole necessitated very slow work.

NORTH TEXAS

FORT WORTH, Tex., Oct. 19.—Gulf Production Co.'s No. 3 Crier-McElroy, Crane County, flowed 200 bbls. from pays at 2,741-45 and 2,745-60 feet. No. 2 Crier-McElroy flowed 540 bbls. at 2,820 feet. No. 1 flowed 295 bbls. in 24 hours from 2,732 feet and will be deepened.

The Gulf company made a location in Castro County, south of the Texas Panhandle, for No. 2 Clements, 330 feet SW cor. Section 27, Block M-10-A, Sealz & Morris Survey, 4 miles southeast of Dimmitt. Cable tools are moving in for a 3,500-foot test. The Gulf company has a 28,000-acre block obtained free for well.

In Hutchinson County Big Creek or Prairie Oil & Gas Co.'s No. 1 Merchant, Section 37, Block 47, elevation 2,832 feet, top lime 1,877 feet, is spraying 60 bbls. from 2,708-10 feet, or 122 feet above sea level. It probably will not be drilled in for two weeks until the Prairie can lay a line, but looks like possibility of a good producer. It is 5 miles west of big production.

GULF COAST

HOUSTON, Tex., Oct. 19.—Marland Oil Co.'s No. 1 Prudential, at Pierce Junction, is flowing 800 bbls. at 3,708 feet.

Nigger Creek production is divided as follows: Transcontinental Oil Co., 8,025 bbls.; Godley Oil Co., 2,200; Moss & Keeling, 1,075; E. L. Smith Oil Co., 450; Barclay & Meadows, 150; Atlantic Oil Producing Co., 450; Simms Oil Co., 135; Murchison & Fain, 263; J. K. D. Schaffer, 120; Pure Oil Co., 100 bbls.

LOUISIANA-ARKANSAS

SHREVEPORT, La., Oct. 19.—The Texas Company's No. 1 Curtis, Section 14-20-15, which made 235 bbls. an hour the first five hours, after being allowed to flow open started falling off and Monday afternoon was flowing at the rate of 125 bbls. an hour. Magnolia company's No. 1, north offset to the No. 1 Curtis, is flowing 600 bbls. daily.

ROCKY MOUNTAIN AREA

CASPER, Wyo., Oct. 19.—A wildcat near Cut Bank, Mont., in Glacier County, on the Berger ranch, struck a flow of gas estimated at 6,000,000 feet in the Sunburst sand at 2,745 feet. The well is located about 7 miles west of the Sunburst Field and 30 miles south of the Canadian wet gas field in Turner Valley. The Ellis sand, which is the main oil-producing horizon of the Sunburst Field, should be found about 300 feet below the present depth of the well.

SOUTHWEST TEXAS

SAN ANTONIO, Tex., Oct. 19.—Magnolia Petroleum Co.'s No. 1 Webster, in the Carolina-Texas gas field, in Webb County, is standing 1,300 feet in pure oil of 42 gravity at 3,049 feet. It is 400 feet northwest of Associated Oil Co. and Usher Carson's discovery well, which is producing at 2,600 feet and is the only other producer in the field, and making 36 gravity oil.

LIMESTONE COUNTY WILL GET TEST TO THE TRINITY HORIZON

By Special Correspondent

CORSICANA, Tex., Oct. 16.—Limestone County is to have a Trinity sand test. The Humble Oil & Refining Co., Magnolia Petroleum Co., J. K. Hughes Development Co. and E. L. Smith Oil Co. have blocked out an area along west of the Mexia Field and will drill to the Trinity if necessary. Derrick is up for the first test on the Steubenrach farm.

The Humphreys Corp. is by no means discouraged with its disappointing results of its expensive drilling campaign in Cherokee County. Its latest test has been abandoned because of hole trouble, but this and other tests on the Humphreys block have showed enough geologically for the company to pick a location which is believed to be higher up the structure and nearer the fault and there another test will be drilled. No. 1 Boling, the lately abandoned test, was on the Waters Survey. Nicholle & Wife of Corsicana were last reported drilling in sandy shale at 2,230 feet in their No. 1 Hill, Durak Survey. The Magnolia Petroleum Co. was drilling in shale at 2,645 feet and the Humble Oil & Refining Co. is drilling below 3,435 feet. The top of the hard chalk was found at 3,140 feet. The expected pay in the Cherokee County was expected around 4,100 feet.

In the Nigger Creek Field in Limestone County the Transcontinental Oil Co.'s No. 3 Cochran, Varella Survey, tested a salt water and was abandoned, total depth 2,820 feet. The same company's No. 12 Rosson, Varella Survey, swabbed 258 bbls. the first 24 hours from sand at 2,831-36 feet. The Atlantic Oil Producing Co.'s No. 3 Rosson, Varella Survey, started at 275 bbls. from sand at 2,839 feet. The Godley Oil Co. found at 450-bbl. initial production in No. 3-A Rosson, Varella Survey, sand at 2,793-2,806 feet. Very little drilling is left unfinished in the Nigger Creek area. There are 18 wells drilling, most of them near completion.

A deep test will be drilled in the Kosse-Thornton district to seek the Edwards lime which is believed to lie at from between 3,250 and 3,300 feet in that area. It is said the test will be drilled with cable tools to a depth of 3,500 feet if necessary.

In McLennon County the Pecan Gap Oil Co. is drilling below 2,000 feet on the E. W. Punchard farm, Sanchez Survey.

In Anderson County the Navarro Oil Co. abandoned its No. 5 Greenwood, Smullen Survey, which was dry at 3,503 feet. The Humble Oil & Refining Co. was last reported about to set 5⅞-inch casing at 2,571 feet in No. 1-A Block 16, Anderson County school land survey.

The Magnolia Petroleum Co. has had three derricks pulled in in drilling its No. 1 Getzendammer, Mayfield Survey, and is rebuilding derrick. It has a fishing job at 2,940 feet. Salt water was encountered at 2,765 feet.

In Falls County Forbalet and others are below 2,392 feet in No. 1 Kyser, Sessam Survey. The Highbank Oil Co.'s No. 1 Peacock, Pierson Survey, was at 3,020 feet, and casing was being reset. It will be completed with cable tools.

In Henderson County Ferdinand Heine's No. 1 Sterrett, Marshall Survey, was below 1,100 feet.

In Kaufman County the Atlantic Oil Producing Co. and Hill's No. 1 Haynie Brothers was abandoned as dry at 3,101 feet.

WELDING EXPOSITION AND CONVENTION PLANS

Buffalo will entertain the American Welding Society at the annual fall meeting November 16 to 19. In connection with the meeting will be held the International Welding and Cutting Exposition, something unique in expositions, showing the practical application of welding in its different processes and the marvels being accomplished in the field of welding and cutting.

The leading industries of the United States and Canada and some European countries, directly interested in the welding industry, and many others indirectly interested, will have exhibits.

The technical papers to be presented at this convention are of importance to engineers, since they have to do with processes that are revolutionizing industry in many of its phases. When it is remembered that commercial welding and cutting is only a few years old and marvelous progress has been made within that time, but that there is an almost unlimited field for research work and improvement in methods, the importance of these new processes can be realized. Welding, like radio, has had its growth within the past few years and commercially its field is undoubtedly just as important. Like radio, its practical use and development has been more rapid than its technical side, which means unlimited opportunity for new accomplishment by the engineer.

A large attendance from all over the United States and Canada is assured and it is expected that between 10,000 and 20,000 people will visit the Broadway Auditorium during this exposition.

A well-balanced program is being prepared and the entertainment features as well as the business sessions will undoubtedly appeal to all.

The headquarters of the exposition are of 510 Morgan Bldg., Buffalo, N. Y., and the general chairman is G. W. Swan; vice chairmen, Robert Siemer and Carl D. Miller. The various committees with their heads follow: Publicity, Harry F. Boe; reception, G. W. Schick; exhibit, Robert Siemer; hotel and transportation, P. W. Kromer; ladies, Mrs. Robert Siemer; program, C. B. Davison; finance, Carl D. Miller; entertainment, C. H. Lockwood.

Panhandle Passes 152,000 Barrel Mark

Hutchinson County Gains 10,095 Bbls., Gray County 1,325. Another Increase in Output Expected Next Week

By C. D. Lockwood
Staff Correspondent, Panhandle Field

As predicted last week, the Texas Panhandle production took another leap, this time passing the 150 000-bbl. mark. Lar e wells in the Hutchinson County Field were mainly responsible although Gray County helped out materially with a 1,325-bbl. gain and Carson and Wheeler Counties also added a little. Hutchinson County's increase, however, amounted to 10,095 bbls. The total for the district this week was 152,105 bbls. And another deluge of big wells in the breaks of the Canadian presages a further rise next week.

The Pampa Pool, in Gray County, came to the front with some large wells this week. The Wilcox-Pampa Oil Co.'s No. 13 Worley & Reynolds, NW cor. SW, Section 62, Block 3, was good for 2,000 bbls. when deepened from 2,876 to 2,882 feet in pay topped at 2,863 feet. Same company's No. 14 came in for 90 bbls. an hour in granite wash at 2,938-50 feet. It had a slight spray of oil also at 2,-872-2,908 feet. The Gulf Production Co.'s No. 5 Worley, reported in the late news last week, flowed 1,140 bbls. from total depth of 2,936 feet. This is in the NE cor. NW SE, Section 83. Gulf's No. 1 A. Holmes, NE cor. NW SE, Section 87, was completed when it swabbed 65 bbls. in 24 hours following a shot, total depth being 3,176 feet; No. 1 Merten, SE cor. Section 88, extended production to the northwest about a quarter of a mile when it swabbed 140 bbls. from 3,250 feet and was pulling big pipe to pump; No. 3 Worley, SE cor. Section 83, flowed 325 bbls. the first 14 hours at 3,002-08 feet. Top of graite was 2,995 feet.

Gray County Wildcats

Among the wildcatters in Gray County, several claimed important attention. Gulf Production Co.'s No. 1 McConnell, CNL NW, Section 175, Block 3 swabbed 27 bbls. in 6 hours at 3,132 feet in granite wash topped at 3,110 feet, but drilled on through it and Monday was drilling in granite wash at 3,170 feet. The showing that this well made at 3,132 feet is reported to have caused the Roxana Petroleum Corp. to spend $25,000 in cash and an equal amount in oil for the west half of the NE of Section 175. This is 5 miles west of Pampa.

About 5 miles east of the Pampa Pool, Roxana Petroleum Corp.'s No. 1 Finley, in the B. E. Cheney Survey, was shut down for orders with 200 feet of oil in the hole. The first show was found at 2,907-76 feet and the second pay was encountered at 3,018 feet in sandy lime.

Phillips Petroleum Co.'s No. 1 Merten, SW cor. NE, Section 82, Block 3, responded nicely to a heavy shot. It was given 260 quarts at 3,042-3,150 feet and flowed 455 bbls. of 43 gravity oil in the first 13 hours. Magnolia Petroleum Co.'s No. 4 Merten, NE cor. SW, Section 82, Block 3, shot with 210 quarts at 2,972-3,062 feet, total depth, 3,080 feet, and flowed 15 bbls. per hour; No. 8, SW cor. SE, same section, was flowing 6 bbls. an hour at 2,940-60 feet and drilling deeper; No. 11, east offset to No. 4, was shot with 60 quarts at 2,996-3,030 feet and lost the tools. Empire Gas & Fuel Co.'s No. 1 Worley, SW cor. SE, Section 63, flowed 200 bbls. in 15 hours following a shot of 200 quarts at 2,966-3,040 feet. McMan Oil & Gas Co.'s No. 8 Worley & Reynolds, SE cor. SW NE, Section 83, swabbed 120 bbls. in 8 hours from lime at 2,928-40 feet.

Carson County

In Carson County, Republic Production Co.'s No. 1 Jordan, Section 103, Block 4, was deepened to 3,138 feet and gauged 47 bbls. Monday. It was being prepared for a shot Tuesday. White Deer Oil Co. staked a location in the SE NE, Section 104, Block 4, and will probably start up on it soon.

Prairie Oil & Gas Co. staked a new location in Carson County, near the Gray County line, which adds another link to the chain of tests between the Gray County Pool and Hutchinson-Carson area. The new one is No. 1 McConnell, 330 feet from the north line and 990 feet from the east line of SE of Section 67, Block 4. It is about 2 miles due west of Young & Patrick's No. 1 Byrum, the old gasser, and 4 miles southeast of Roxana's No. 1 Bryan.

Hutchinson County

In Hutchinson County, S. D. McElroy's No. 3 Smith flowed 1,475 bbls. the first 12 hours after drilling out the bridge. Westex Oil Co.'s No. 9 Whittenburg, SE of Section 13, Block Y, flowed 2,308 bbls. in 12 hours after a 60-quart shot at 2,895-2,955 feet. Phillips Petroleum Co. and Gibson & McMillan's No. 3 Whittenburg, Lot 25, Caperton & Williams Subdivision, which was completed late in September for 400 bbls. at 2,894 feet, was shot with 80 quarts at 2,862-86 feet and started off flowing 75 bbls. an hour, 30 per cent water. Prairie Oil & Gas Co.'s No. 3 Johnson-B, SW cor. 160 acres in Section 69, Block 46, flowed 1,000 bbls. from lime at 2,902-17 feet and will be deepened as soon as sufficient storage is erected.

Gulf Production Co.'s No. 2 Ellis Cockrell flowed 387 bbls. after a 200-quart shot at 2,882-2,960 feet; No. 11 E. B. Johnson pumped 60 bbls. at 2,910 feet; No. 30 Dial flowed 800 bbls. at 2,975 feet.

McMan Oil & Gas Co.'s No. 4 Johnson-Martin Gray, in SE cor. SE NE, Section 21, Block Y, was reported to have started at 220 bbls. an hour when deepened to 2,938 feet, top of pay 2,928 feet, but lated decreased to 135 bbls. an hour. McMan Oil & Gas Co.'s No. 7, in the NW cor. NE, Section 5, Block Y, flowed and swabbed 30 bbls. an hour after a 220-quart shot at 2,717-72 feet.

Moore County hopes received a slight jolt when Prairie Oil & Gas Co.'s No. 1 Sneed, Section 26, Block 6-T, encountered 1,500 feet of salt water at 3,030-40 feet.

In Hutchinson County, Shamrock Petroleum Co.'s No. 1 Merchant, Section 37, Block 47, was spraying oil and shut down for orders at 2,715 feet. Goldelline Oil Co.'s No. 1-H Whittenburg, Section 15, Block XO2, swabbed 35 bbls. and shut down at 3,042 feet.

Pampa Pool Drilling

Following is a drilling report of wells in the Pampa Pool, Gray County:

Humble Oil & Refining Co.'s No. 1 Merten, Section 87, drilling at 3,050 feet; No. 2, standardizing at 2,460 feet; No. 3, standardizing at 2,461 feet; No. 4, drilling at 2,814 feet; No. 5, all in same section, drilling at 2,184 feet; No. 1 Osborne, Section 86, drilling at 2,449 feet; No. 1 Worley & Reynolds, Section 83, drilling at 2,972 feet and 900 feet of oil in the hole, top of granite wash 2,940 feet; No. 2, running 6-inch at 2,965 feet; No. 3, standardizing at 2,458 feet; No. 4 standardizing at 2,432 feet; No. 5, drilling at 2,352 feet; No. 6 all in same section, drilling at 2,131 feet. Magnolia Petroleum Co.'s No. 1 A. Holmes, Section 106, cellar; No. 2 Merten, Section 82, drilling at 2,300 feet; No. 3, drilling at 2,255 feet; No. 4, flowed 15 bbls. per hour for 24 hours and sanded up at 3,080 feet; No. 5, drilling at 785 feet; No. 7, fishing casing; No. 8, flowed 6 bbls. at 2,940-60 feet and drilling deeper; No. 9, cleaning out at 3,077 feet; No. 10, drilling at 2,710 feet; No. 11, shot with 60 quarts at 2,996-3,020 feet and total depth 2,150 feet and bridged; No. 12, drilling at 2,650 feet; No. 13, drilling at 2,275 feet; No. 14, drilling at 2,415 feet; No. 15, drilling at 2,425 feet; No. 16, rig; No. 17, all in same section, spudded and shut down. Marland Oil Co.'s No. 1 Benton, Section 63, cleaning out at 2,160 feet. McMan O.l & Gas Co.'s No. 1 Merten, Section 87, underreaming 6-inch at 3,170 feet; No. 2 Worley & Reynolds, Section 83, drilling at 2,545 feet; No. 3, shut down at 2,436 feet; No. 4, 3,060-3,100 feet, total depth 3,125 feet, and 500 feet of oil in the hole; No. 5, shut down for orders at 3,025 feet; No. 6 standardizing at 2,489 feet; No. 7, standardizing at 2,458 feet; No. 8, all in same section, 2,928-40 feet, swabbed 120 bbls. in 8 hours. Phillips Petroleum Co.'s No. 1 H. M. Davis, Section 86, drilling at 2,250 feet; No. 1 J. H. Merten, Section 87, location; No. 1 Merten Brothers, Section 82, shot with 260 quarts at 3,042-3,150 feet and cleaning out; No. 2, same section, 3,060-3,136 feet, total depth 3,162 feet, 3,000 feet of oil in the hole. Prairie Oil & Gas Co.'s No. 2 Merten, Section 82, total depth 3,093 feet and 1,500 feet of oil in the hole; No. 3, standardizing at 2,475 feet; No. 4, standardizing at 2,473 feet; No. 5, all in same section, standardizing at 2,-446 feet. No. 2 Worley & Reynolds, Section 83, standardizing at 2,415 feet; No. 3, standardizing at 2,479 feet; No. 4, standardizing at 2,325 feet; No. 5, standardizing at 2,433 feet; No. 6, standardizing at 2,391 feet; No. 7, all in same section, rigging up tools. Pure Oil Co.'s No. 2 Benton, Section 63, drilling by tools at 3,118 feet and 200 feet of oil in the hole; No. 3, same section, flowing by heads, 80 bbls. at 3,033-78 feet; No. 1 H. M. Davis, Section 86, standardizing at 2,454 feet. Sun Oil Co.'s No. 1 Worley & Reynolds, Section 83, drilling by tools at 2,870 feet; No. 2, same section, drilling at 2,825 feet; No. 3, same section, set 12-inch at 200 feet; No. 4, same section, drilling at 2,025 feet. The Texas Company's No. 1 A. Holmes, Section 87, standardizing at 2,463 feet; No. 2, drilling at 2,400 feet; No. 3, standardizing at 2,454 feet; No. 4, all in same section, shut down at 890 feet; No. 1 E. M. Osborne, Section 108, new location; No. 1 C. W. Saunders, Section 81, drilling at 2,670 feet. Wilcox-Pampa Oil Co.'s No. 5 Worley & Reynolds, Section 62, cement 8-inch at 2,826 feet; No. 7 cementing 8-inch at 2,826 feet; No. 8, shut down at 3,082 feet; No. 11, all in same section, fishing at 3,225 feet.

WILDCAT OPERATIONS IN PANHANDLE

Week Ending October 16, 1926

Company, Well, Farm Name, Section and Block—	Remarks—
ARMSTRONG COUNTY	
Red Hill Corp.'s No. 1 Puckett Bros., Section 3, Hooper & Wade Sur.	Shut down 1,750 ft.
BRISCO COUNTY	
Smith & Baker's No. 1 J. W. Owens, Sec. 11, Blk. GC2.	New loc., NE cor. SE Sec. 11 D. & S. E.
CARSON COUNTY	
Amatex Oil Co.'s No. 1 E. S. Polling, Sec. 22, Blk. 2-Y.	Shut down 1,980 ft.
Champlin Ref. Co.'s No. 1 E. F. Bryan, Sec. 92, Blk. 4.	Location.
Empire G. & F. Co.'s No. 1 Burnett, Sec. 127, Blk. 5.	Shut down 3,152 ft., spraying 25 bbls. oil. Top granite wash at 3,150 ft.
Empire G. & F. Co.'s No. 1 M. P. Co. fee, Sec. 91, Blk. 4.	Location.
Humble O. & R. Co.'s No. 1 Burnett Acct. 3, Sec. 127, Blk. 5	Set 8-in. 2,146 ft.
Humble O. & R. Co.'s No. 1 Burnett, Acct. 4, Sec. 12, Blk. 4	Cleaning out 1,990 ft.
Magnolia Pet. Co.'s No. 1 fee, No. 244, Sec. 91, Blk. 4.	New location, NW cor. NE Sec. 91.
Marland Oil Co.'s No. 1 E. F. Bryan, Sec. 92, Blk. 4.	Drilling 350 ft.
Marland Oil Co.'s No. 2 E. F. Bryan, Sec. 92, Blk. 4.	Rigging up.
Marland Oil Co.'s No. 1 Burnett-E, Sec. 117, Blk. 4.	Drilling 2,650 ft.
Marland Oil Co.'s No. 1 Burnett-F, Sec. 117, Blk. 5.	Rigging up.
Marland Oil Co.'s No. 1 Burnett-G, Sec. 126, Blk. 5.	Spudded.
McMan O. & G. Co.'s No. 1 E. F. Bryan, Sec. 107, Blk. 4.	Spudding.
McMan O. & G. Co.'s No. 2 E. F. Bryan, Sec. 107, Blk. 4.	Location.
McMan O. & G. Co.'s No. 3 E. F. Bryan, Sec. 107, Blk. 4.	Rig.
McMan O. & G. Co.'s No. 4 E. F. Bryan, Sec. 107, Blk. 4.	Location.
Mound Valley Oil Corp.'s No. 1 G. W. Witter, Sec. 1 Blk. 7	Drilling 2,660 ft.
Navajo Oil Co.'s No. 1 E. S. Polling, Sec. 22, Blk. 2-Y.	Drilling 1,200 ft.
Nunn & McAuley's No. 1 E. F. Bryan, Sec. 107, Blk. 4.	Shut down, crooked hole, 580 ft.
Prairie O. & G. Co.'s No. 1 Deahl, Sec. 5, Blk. 5.	Underreaming 10-in. 2,100 ft., total depth 2,460 ft.
Republic Prod. Co.'s No. 1 C. R. Garner, Sec. 103, Blk. 4.	Total depth 3,138 ft., top pay 3,010 ft., second pay 3,050-55 ft., flows 50 bbls.
Roxana Pet. Corp.'s No. 2 E. F. Bryan-A, Sec. 92, Blk. 4.	Rig.
Roxana Pet. Corp.'s No. 3 E. F. Bryan-A, Sec. 92, Blk. 4.	Rig.
Roxana Pet. Corp.'s No. 1 E. F. Bryan-B, Sec. 107, Blk. 4.	Drilling 570 ft.
Roxana Pet. Corp.'s No. 1 E. F. Bryan-C, Sec. 107, Blk. 4.	Rigging up.
Roxana Pet. Corp.'s No. 1 E. F. Bryan-D, Sec. 92, Blk. 4.	New location, SE cor. NW Sec. 92.
The Texas Company's No. 1 M. P. Co. fee, Sec. 91, Blk. 4.	Rigging up.
The Texas Company's No. 2 M. P. Co. fee, Sec. 91, Blk. 4.	Rig.
The Texas Company's No. 1 Burnett, Sec. 89, Blk. 5.	Drilling 600 ft.
White Deer Oil Co.'s No. 1 Jordan-Brown, Sec. 114, Blk. 4.	Fighting cave 3,120 ft.
CHILDRESS COUNTY	
Gibson Oil Corp. et al's No. 1 Smith, J. Gregg.	Drilling 2,600 ft.
COLLINGSWORTH COUNTY	
Allmen and others' No. 1 McDowell, Sec. 107, Blk. 22.	Rigging up tools.
Duke & Langford's No. 1 Martha Johnson, Sec. 97, Blk. 22.	New location, C SW Sec. 97.
Gibson Oil Corp.'s No. 1 Williams et al, Sec. 5, Blk. 13.	Drilling 2,105 ft.
Harmon & Deems' No. 1 Wilson (Scott), Sec. 44, Blk. 21.	Rig on ground.
Martin and others No. 1 T. V. Norwood, Sec. 30, Blk. 16.	Spudded and shut down.
DALLAM COUNTY	
James and others' No. 1 fee, Sec. 9, Blk. 47½.	Shut down 2,870 ft.
Harry Skelly et al's No. 1 Capitol Synd., Sec. 19, Blk. 17.	Drilling 610 ft.
DEAF SMITH COUNTY	
Julian & DeGrace's No. 1 Mrs. R. A. Hindley, Sec. 47, Blk. K-8	New location, 330 ft. S and 1,320 ft. E NW cor.
Red Hill Oil Corp.'s No. 1 Barrett, Sec. 93, Blk. K-4.	New location, NE cor. SW NW of section.
DONLEY COUNTY	
A. T. Drilling Co.'s No. 1 F. E. Harrington, Sec. 39, Blk. 3-C	Moving in pipe 280 ft.

(Continued on Page 169)

TEXAS PANHANDLE COMPLETIONS

Carson County

Empire Gas & Fuel Co.'s No. 1 Burnett, Section 127, Block 5, was spraying 25 bbls. from granite wash at 3,150-52 feet and was shut down for tankage. Marland Oil Co.'s No. 2 Burnett-A, Section 116, Block 5, was plugged back from total depth of 3,205 feet to 3,195 feet and completed for 7,000,000 feet of gas.

Gray County

Pure Oil Co.'s No. 1 Benton, Section

(Continued on Page 157)

Crane-Upton Area Output Increasing

Independent Oil & Gas Co. Well Makes 52 Bbls. an Hour, 10 Per Cent Water and 30 Per Cent b.s. Turbeville's New Record

By C. D. Lockwood
Staff Correspondent, North Texas Fields

FORT WORTH, Tex., Oct. 18—Large wells in Crane-Upton area of west Texas and a crude oil purchase of considerable magnitude involving production of the Independent Oil & Gas Co. and the Dixie Oil Co. again attracted the spotlight to that portion of the Lone Star State, although the Wichita Falls district offered plenty of competition, with the Turbeville Pool in Archer County providing an 1,800-bbl. gusher and the output lacking but 109 bbls. of reaching the record set during the Burkburnett boom in 1919. Unless some of the older fields in this area show declines next week, it is probable the Wichita Falls district will pass the previous high mark and establish a new all-time record. Montague County continues on its upward way, having passed the 9,000-bbl. mark and is now considerably above Young County. Montague even passed Shackelford County this week by a few barrels.

This week's contribution to the list of large producers in the Hurdle district of Upton County was the Independent Oil & Gas Co.'s No. 3 Emma Wooley, south offset to the Dixie Oil Co.'s Hughes lease and directly south of the big No. 4 well of the Dixie's. No. 3 Wooley came in Monday morning at the rate of 52 bbls. an hour, 10 per cent of which is water and 30 per cent b.s. The crude tests 30.9 degrees gravity and is coming from 2,160 feet, with top of pay at 2,047 feet. Independent's No. 4 Wooley, in the northeast corner of this tract, offsetting the Humble Oil & Refining Co.'s No. 1 Ricker & Dodson, is due in at any time. It was drilling at 2,236 feet on Monday with 1,400 feet of oil in the hole.

The Texas Company's No. 9 S. M. King, north offset to the Dixie Oil Co.'s No. 6 Hughes, was reported last week as flowing at the rate of 300 bbls. an hour. This well was allowed to flow open and was estimated to have produced about 3,600 bbls. of oil and an equal amount of water from total depth of 2,150 feet on the first day. A couple of days later, however, the oil content of the great volume of fluid dropped to 658 bbls., while the water increased to 4,922 bbls. A ¾-inch choke was then put on after the water had practically drowned out the oil, and on Monday of this week the proportion was about 300 or 400 bbls. of oil in some 3,700 bbls. of fluid. It will probably have to be choked down still further in order to hold back the ocean, although there is danger of forcing the fluid back of the 8-inch if the back pressure becomes too great.

Crude Oil Purchase

The market situation for west Texas oil great improved this week when the Southern Pipe Line Co., subsidiary of the Standard Oil Co. of Indiana closed a contract with the Independent Oil & Gas Co. for 200,000 bbls. of oil, to be delivered as quickly as the Independent can furnish it. This deal accounts for the drilling in of the No. 3 Wooley, mentioned above. Under the terms of the contract, the Independent is to get a minimum price of $1 a barrel at the well and is also to have the advantage of any increases in the posted prices in that region. The Southern Pipe Line Co. started 200 tank cars to the Hurdle district last week and is to erect two 55,000-bbl. tanks in Section 64, Block 35, H. & T. C. Survey, on land purchased from A. S. Burleson. The company will lay a line about 10 miles long from the tank farm to the Taylor, Wooley and Hughes leases and another of approximately 2 miles from the tank farm to a loading rack on the Orient. Part of this oil will probably go to the Pan-American refinery at Destrahan, La.

Crane County Gains

Perhaps the most important development of the week in west Texas was the results obtained by the Gulf Production Co. on its McElroy block. Drilling operations, which have been suspended there since the middle of August while a couple of 80,000-bbl. tanks were under construction, were resumed last week, and Monday the Gulf had 1,521 bbls. of production obtained in a 21-hour period. That is to say, the total output of four wells on the J. T. McElroy and Crier-McElroy leases, only two of which are closer together than half a mile, was 1,521 bbls. in 21 hours. Gulf's No. 1 Crier-McElroy, half a mile east of the discovery, topped the second pay at 2,700 feet, and at 2,720 feet was flowing by heads every hour, and it made 458 bbls. in 21 hours with the bailer lost in the hole. No. 2 Crier McElroy, NW cor. SW, Section 198, north of the discovery, flowed 373 bbls. in 21 hours; No. 3 Crier-McElroy, half a mile south of the discovery, was drilling at 2,735 feet with no oil. No. 1 J. T. McElroy, the discovery well, produced 483 bbls. at 2,850 feet and is to be deepened; No. 2 J. T. McElroy, half a mile west of No. 1, was drilling at 510 feet; and No. 3 flowed 270 bbls. in 21 hours. It is evident that Crane County production will jump about 1,000 or 1,500 bbls. next week, depending upon the success of the Gulf's deepening operations.

Bill Dunning's No. 1 Crier-McElroy, SW cor. NW, Section 198, offsetting Gulf's No. 3 J. T. McElroy and No. 2 Crier-McElroy, was drilling at 2,720 feet Monday with no oil in the hole.

The Wentz Oil Corp.'s discovery well, near Hurdle in Upton County, was still engaged in efforts to overcome casing troubles, and at latest report the water was decreasing. In Winkler County, Westbrook and Eastland Oil Co.'s No. 1 Hendricks, SE cor. Section 42, Block B-5, had reached total depth of 2,831 feet in sandy lime and shale and the gas had increased to 750,000 feet, but there was no oil in the hole. In Ector County, J. S. Cosden's No. 1-A Connell, NE cor. Section 13, Block 16, swabbed and flowed 75 bbls. Saturday at 3,500 feet, and it also had 100,000 feet of gas.

Turbeville Pool

The outstanding well of north Texas during the week was the Petroleum Producers Co.'s No. 3 Turbeville in Section 171 of the Robert Carson Survey. It swabbed and flowed 1,821 bbls. in 24 hours, making it the best well in the pool. Several other excellent wells in this pool are listed among the completions given below. L. T. Burns' No. 2 Turbeville swabbed 700 bbls. at 1,507-23 feet, also.

In Wichita County, Clark & Campbell's No. 1 Ward & Todd in Lot 14 found a new sand at 1,950-58 feet. It carried a show of oil and was being tested out.

In Stephens County, Texas Fidelity Oil Corp.'s No. 2 Pratt, NW cor. Section 69, Block 6, T. & P. Survey, tested 11,000,000 feet of gas at 1,907-75 feet and looked good for 100 bbls. at 1,907-65 feet, but was drilling ahead.

Sinclair Oil & Gas Co. found a show of oil in Shackelford County, but it didn't amount to much. This was in No. 1 Nail, NE SW Section 109, Block 10, northwest of the Cook Ranch Pool, and occurred at 1,317-20 feet in the Tannehill pay. The Cook pay, if any, should be about 100 feet below. Wentz Oil Corp.'s No. 3 Proctor, in the NW of Section 109, Block 10, same county, also topped a sand at 1,515 feet, carrying a show of oil, and was underreaming the 8-inch to test it.

Tannehill Oil Co.'s No. 1 Moberly in Section 59, southeast of the Cook Pool, was a better well than reported last week. It was deepened to 1,135 feet, top of pay 1,127 feet, and flowed 721 bbls. along with 2,500,000 feet of gas. About a dozen locations have been made around it, eight on the Roeser & Pendleton and Marland acreage to the north.

Another Shackelford County wildcat showing was Don Moore's No. 1 Nail, C Section 123, Block 10, which topped sand at 1,485 feet with a good show. There was 60 feet of open hole which was caving badly, and pipe was run to drill in.

In Throckmorton County, Overlees' No. 1 Matthews in the north part of their 53 acres in Section 38, Comanche Indian Reserve, was making one and one-half bailers of oil an hour from sand at 1,002-10 feet. It was equipped to pump and was estimated good for about 20 bbls., but too much gas was coming with the oil to pump it.

WEST TEXAS WILDCATS

Week Ending October 16, 1926

ANDREWS COUNTY

Company, Farm and Location—	Remarks—
A. G. Carter & Zweifel's No. 1 Cowden, C SE Sec. 18, Blk. A-52, Pub. Sch. Ld. Sur.	Moving in material

BREWSTER COUNTY

J. Rosenborough & Skinner's No. 1 Skinner, C Sec. 39, Blk. 4, T. & S. L. Sur.	Total depth 1,290 ft., underreaming 10-in.

COKE COUNTY

Lipan Oil Co.'s No. 1 E. C. Rawlings, CNL Section 390, Blk. 1-A, H. & T. C. Sur.	Flowing sulphur water 2,700 ft., shut down.

CONCHO COUNTY

The Exploration Co.'s No. 1 Hartgrove, Blk. 240	Drilling 1,100 ft.
Kemper Kimberlin and others' No. 1 Schultz, NE NE Sec. 139, Blk. 72, T. & N. O. Sur.	Shut down 1,572 ft.
Culbertson Bros.' No. 1 W. S. See, NE SW Blk. 742	Drilling 1,512 ft.
Gene Mays and others' No. 1 Hartgrove, NW SW Sec. 312, Blk. A-1173	Shut down 965 ft.

CRANE COUNTY

Duffy Bros. and others' No. 1 Cowden Bros., Sec. 65, Blk. X, C. C. S. D. & R. G. N. G. Sur.	Top salt 752 ft., drilling 1,910 ft.
W. H. Dunning's No. 1 Crier McElroy, SW NW Sec. 198, Blk. F, C. C. S. D. & R. G. N. G. Sur.	Shut down 2,648 ft. (corrected).
Gulf Production Co.'s No. 1 State Lasseter, SW cor. Sec. 35, Blk. 30, University Sur.	Fishing bit 1,475 ft.
Gulf Production Co.'s No. 1 Crier-McElroy, C SE SW Sec. 198, Blk. F, C. C. S. D. & R. G. N. G. Sur.	Drilling 2,682 ft., 500 ft. oil in hole.
Gulf Production Co.'s No. 2 Crier-McElroy, NW SW Sec. 198, Blk. F, C. C. S. D. & R. G. N. G. Sur.	Drilling 2,696 ft.
Gulf Production Co.'s No. 3 Crier-McElroy, C SE NE Sec. 198, Blk. F, C. C. S. D. & R. G. N. G. Sur.	Drilling 2,695 ft.
Gulf Production Co.'s No. 4 Crier-McElroy, SW cor. Sec. 198, Blk. F, C. C. S. D. Sur.	Location.
Gulf Production Co.'s No. 2 T. J. McElroy, C SW SE Sec. 203, Blk. F, C. C. S. D. & R. G. N. G. Sur.	Drilling 350 ft.
Independent Oil & Gas Co.'s No. 1 E. S. Hughes, NE NW NE Sec. 86, Blk. X, C. C. & R. G. N. G. Sur.	Drilling 2,304 ft.
Independent Oil & Gas Co.'s No. 2 Taylor, Sec. 6, H. T. Sapp Sur.	Location.
Independent Oil & Gas Co.'s No. 3 Taylor, Sec. 6, H. T. Sapp Sur.	Drilling 1,930 ft.
Independent Oil & Gas Co.'s No. 5 Taylor, Sec. 6, H. T. Sapp Sur.	Shut down 1,974 ft.
Independent Oil & Gas Co.'s No. 7 Taylor, Sec. 6, H. T. Sapp Sur.	Drilling 2,625 ft.
Independent Oil & Gas Co.'s No. 8 Taylor, Sec. 6, H. T. Sapp Sur.	Shut down 2,400 ft., top pay 2,378 ft., 600 ft. oil in hole.
Independent Oil & Gas Co.'s No. 9 Taylor, Sec. 6, H. T. Sapp Sur.	Drilling 1,640 ft.
Independent Oil & Gas Co.'s No. 10 Taylor, Sec. 6, H. T. Sapp Sur.	Top salt 500 ft., drilling 1,140 ft.
Magnolia Petroleum Co.'s No. 2 O'Keefe (Univ.), NW NW Sec. 32, Blk. 30, University Sur.	Top salt 1,180 ft., drilling 1,330 ft.
Magnolia Petroleum Co.'s No. 1 State-Lasseter, Sec. 35, Blk. 30, University Sur.	Location.
Magnolia Petroleum Co. & Hardwick's No. 1 University	Drilling 635 ft.
Marland Oil Co.'s No. 1 Cowden, SE cor. Sec. 81, Blk. X, C. C. S. D. & R. G. N. G. Sur.	Spudding 325 ft.
Marland Oil Co.'s No. 2 Hughes-Gibbs, Sec.	

(Continued on Page 158)

NORTH CENTRAL TEXAS

Estimated Production
Week Ending October 16, 1926

Ranger District—	This Week	Last Week
Brown County	12,923	13,305
Callahan County	4,133	4,139
Coleman County	1,663	1,571
Comanche County	1,770	1,791
Palo Pinto County	417	411
Ranger	5,740	5,730
Shackelford County	9,217	8,977
Stephens County	12,100	11,884
Total Ranger district	47,903	47,807

Wichita Falls District—	This Week	Last Week
Electra	18,485	18,702
Burkburnett	10,860	13,054
Iowa Park	4,691	4,370
Archer County	33,376	32,873
Clay County	722	694
Wilbarger County	13,601	13,866
Montague County	9,224	8,731
Young County	8,590	8,231
Jack County	230	230
Throckmorton County	1,434	1,464
Baylor County	154	219
Cooke County	730	611
Total Wich. Falls district	102,097	101,571

West Texas District—	This Week	Last Week
Big Lake Field	28,694	28,779
Crane County	1,503	1,498
Crockett County	1,077	1,035
Howard County	386	377
Jones County	666	666
Mitchell County	2,202	2,211
Scurry County	51	51
Upton County	10,674	11,694
Garza County	7	.....
Total West Texas district	46,260	46,311
Grand total	196,260	195,373
Increase	869	

Eastland County

In Eastland County, Lewis & Moore's No. 1 Whittington, NE cor. NW, Section 72, Jessie Harbin Survey, was estimated at 40 bbls. from 1,232-38 feet.

In the Masters Pool, Throckmorton County, Gulf Production Co.'s No. 1 J. M. Parrott in the NE of Section 970 was shot with 80 quarts at 4,385-4,440 feet and again with 80 quarts at 4,315-40 feet. It bridged at 3,355 feet, and Monday was cleaned out to 3,800 feet, but no

(Continued on Page 156)

"We Eat Here Ourselves"—

With reference to NATURAL GASOLINE we are in the same position as the country hotel-keeper who posts the above sign in his dining room.

For a decade the BELL OIL & GAS COMPANY has manufactured NATURAL GASOLINE.

For eight years it has marketed the output of other manufacturers, in addition to its own, and maintained a fleet of insulated tank cars for this purpose.

For five years it has utilized vast quantities of NATURAL GASOLINE in its own refineries—so paradoxically

its interests are identical with both the manufacturer and consumer of NATURAL GASOLINE

NATURAL GASOLINE--150,000 GALLONS PER DAY of it, from 24 plants throughout OKLAHOMA, TEXAS, LOUISIANA and ARKANSAS.

Available for Sale and Contract Over 1927

THE BELL OIL AND GAS CO.

TULSA OKLA.

REFINERIES: Grandfield, Okla., and Arkansas City, Kans.

NATURAL GASOLINE Plants: Oklahoma, Arkansas, Louisiana and Texas.

REFINERS - TRANSPORTERS and SELLERS of PANHANDLE, TEXAS, CRUDE OIL

Seminole Peak Expected in 45 Days

Production by End of Week Probably Will Be 75,000 Bbls. There Are 60 Wells Drilling Below 3,000 Feet

By J. L. Dwyer
Staff Correspondent, Oklahoma Fields

The Seminole Pool in Seminole County is probably the most important spot in the petroleum world today. It is the delight of the producer and the despair of the pipeliner, for its sudden production has overtaxed the capacity of the meager pipeline facilities in this area.

On Monday morning of this week the daily production of the field passed the 60,000-bbl. mark, and by the end of the current week it is very likely it will be producing better than 75,000 bbls.

Out of the total production of the field, there is over 50,000 bbls. of oil coming from the Wilcox sand, and this amount is being produced by 13 wells. The balance of production is coming from the Hunton lime.

The most interesting events of the week in Seminole were the completion of the Indian Territory Illuminating Oil Co. and the Foster Petroleum Co.'s No. 3 Bowlegs, SW cor. NW SE Section 26-9-6. This well is two locations south of the Independent-Garland discovery well, and it found the top of the Wilcox sand 17 feet higher than the latter well. The new well started flowing at the rate of 275 bbls. an hour, and for the first 24 hours it produced 6,600 bbls. On Sunday of this week it was drilled 1½ feet deeper and responded with an increase of 2,500 bbls. The top of the Wilcox sand was 4,043 feet. The pay was found at 4,045 feet, and the present depth of the well is 4,051½ feet. This makes a total of 8½ feet of Wilcox penetrated in this well. The average penetration of this sand in the Seminole Field is 6 feet. The other unusual feature of the week in this area was the finding of oil in the Viola limestone, which has not previously produced. The Viola was found productive in the Pure Oil Co.'s No. 2 Lewis, NE cor. SE SW Section 26-9-6, a diagonal offset to the I. T. I.-Foster well. Top of the Viola was 3,955 feet, and the pay was 4,020-25 feet. The well is making 680 bbls. from this formation, which is unusually thick. The well is still drilling in the Viola formation at a depth of 4,049 feet. If the Viola should be found uniformly productive, it will mean another revision of the estimated peak of the pool, which is now conservatively placed at 150,000 bbls.

Production by Wells

The production of the wells on Sunday of this week was:

Township 9-6, Wilcox Production

	Bbls.
Independent-Garland's No. 1 Fixico	6,249
Nos. 2, 3 and 4 Fixico	10,670
Amerada-Gardner's No. 1 Killingsworth	2,802
Gypsy Oil Co.'s No. 1 Carter	1,301
Mid-Continent Petroleum Corp.'s No. 1 Fixico	4,915
Carter Oil Co.'s No. 1 Carter	1,040
I. T. I. Co.'s No. 2 Reed	274
Tidal-Osage Co.'s Nos. 1 and 2 Mahardy	9,434
I. T. I. and Foster Petroleum Co.'s No. 3 Bowlegs	9,008
Total Wilcox	45,693

Hunton Lime Production in 9-6

Mid-Continent Petroleum Corp.	4,242
Barnsdall Oil Co.	2,367
I. T. I. Oil Co.	1,374
Total	7,983

10-6 Production

Searight and others' No. 1 Grayson	30
No. 3 Grayson	*4,450
Prairie Oil & Gas Co.	825
Carter Oil Co.	700
Mid-Continent Petroleum Corp.	635
Total	6,640
Grand total Seminole Pool	60,516

*This is the only Wilcox well in the north group.

Two Wilcox sand wells in the pool are still cutting. The Gypsy Oil Co.'s No. 1 Carter is cutting 3 per cent, and the Amerada-Gardner No. 1 Killingsworth is cutting 8 per cent. The Amerada-Gardner well has been flowed by air.

With 15 wells drilling at a depth below 4,000 feet, the Seminole Pool should show a healthy increase within 10 days. There are 60 wells drilling below 3,000 feet. It now seems very probable that the peak production of the pool will be attained within the next 45 days, as when most of these wells are drilled in it is thought that the released pressure on the sand will result in a decrease in production per well.

Pipeline Runs

Present pipeline facilities are now overtaxed. According to emergency figures, the lines now in Seminole can handle 58,000 bbls. daily, and the pipeline runs for the past week have been approximately:

	Bbls.
Prairie Pipe Line Co.	18,000
Oklahoma Pipe Line Co.	24,000
Sinclair Pipe Line Co.	8,000
Gulf Pipe Line Co.	5,500
Total	55,500

The task of the pipelines in Seminole has been an unusually trying one. Most of the field is under about one foot of water, and the remainder is a sea of mud. This has greatly hampered line construction, but at the same time it has not affected drilling operations, as they were already started and required no additional material to be hauled in. A single well of the size of the average Wilcox gusher at Seminole is sufficient to tax the capacity of the ordinary temporary pipeline station and pumping equipment used in new fields, and with 13 wells gushing 50,000 bbls., some idea of the pipeliner's task will be conceived. Now that the rains have stopped, and fair weather has been experienced, it is believed that two weeks will witness adequate pipeline accommodations in the field, but until that time it is likely that some oil will take the famous route dreaded by the producers, "down the creek."

North Braman Pool

The next important area of Oklahoma is the North Braman Pool in Kay County near the Kansas line. In this section, the Comar Oil Co.'s No. 6-W Harvell, SW cor. NW NE Section 21-29-1w, found the Wilcox sand at 3,350 feet. The pay was 3,356-71 feet, and the well started flowing 560 bbls. an hour. For the first 24 hours it produced 9,780 bbls. On Sunday it made 8,200 bbls. This has increased the present production of the North Braman Pool to 27,000 bbls. Six Wilcox sand wells are making the bulk of the oil, and about 1,500 bbls. is coming from the more shallow sand. As the Comar Oil Co. is amply entrenched in this field, there will be no rush to drill, but a production of 30,000 bbls. from the deeper formation is to be expected within two months. Out of the six wells now producing in the Wilcox, two have held up their yield remarkably well.

A scattered activity is recorded for the remainder of the state. In Pawnee County, Sheltz and others' No. 3 Martin, NW cor. SW NE Section 7-20-8, is making 300 bbls. from what the owners think is the Siliceous lime found at 2,570-91 feet.

In Lincoln County, the Barnsdall Oil Co. has a good show of oil in a wildcat well, No. 1 Richardson, SE cor. SW Section 8-12-5. The Wilcox sand was found 4,200-09 feet, and the casing is being underreamed.

In the Wewoka deep sand pool in Hughes-Seminole Counties, W. R. Ramsey's No. 6 Amos, NW cor. SE SE, Section 31-8-8, made 2,908 bbls. from the Wilcox sand at 4,179-81 feet. This well helps to bolster the production of the Wewoka deep sand and maintain it above the 23,000-bbl. mark.

In Creek County, the Black Gold Oil Co.'s No. 1-A Gillibray, SW cor. NE NE Section 30-14-8, is making 10 bbls. an hour from sand at 3,410-30 feet. In the Bristow area of the same county, the Texas Pacific Coal & Oil Co.'s No. 1 Van Camp, SE cor. NE SE, Section 5-16-8, had 500,000 feet of gas in the Bartlesville sand at 3,795-3,810 feet.

In northern Lincoln County, the Olean Petroleum Co. has a show of oil and gas in No. 1 Morris, SE cor. NW NE, Section 18-16-4. The show was found in the Wilcox sand at 4,512 feet.

OKLAHOMA WILDCATS

A report on some of the active wildcat operations in northern Oklahoma is given below:

Grant County

Mississippi Valley Oil Co.'s No. 1 Atkinson, SE cor. SE Section 18-29-3w, has a hole full of water and is drilling at 3,275 feet. Otstot Development Co.'s No. 1 Snyder, NE cor. NE Section 6-28-3w, had a hole full of water and is underreaming at 4,330 feet. Wrightsman and others' No. 1 Lehring, SW cor. SE NW Section 19-28-3w, is shut down at 4,290 feet. Marland Oil Co.'s No. 1 School Land No. 32, had a showing of oil at 4,090 feet. It is reported that a rig will be moved in by J. V. Bailey and others for a test in No. 1 Custard, C SE Section 18-27-5w. Dedman, Hennage & Flanagan are running casing at 3,520 feet in No. 1 Barnard, SW cor. SW Section 6-27-3w. Western States Oil Co. is shut down at 4,113 feet in No. 1 Hovell, SW cor. SW Section 14-27-3w. Larutan Fuel Co. is shut down at 662 feet in No. 1 Flood, NW cor. SE Section 23-27-3w. Burns & Beasley have a rig in for No. 1 Birdston, SW cor. NW SW Section 24-27-3w. Brazil & Moses are shut down at 500 feet in No. 1 Royce, SW cor. NW Section 36-26-4w. Dedman, Hennage & Flanagan are shut down at 1,910 feet in No. 1 Sherer, NE cor. SW Section 16-26-3w. Cowden and others are drilling at 3,300 feet in No. 2 Vallner, NE cor. SE NE SW Section 22-25-4w.

Garfield County

Pulse & Beamer have a rig up for No. 1 White, SE cor. NW Section 9-24-6w. Sinclair Oil & Gas Co. is drilling at 3,465 feet in No. 1 Meyers, SE cor. NE Section 10-24-4w. Shaffer Oil & Refining Co. and Gardner Petroleum Co. are having casing trouble at 4,551 feet in No. 1 Brimkin, NW cor. NE Section 32-24-4w. Sager Oil Co. lost the hole at 2,546 feet and skidded the rig in No. 1 Garusch, SE cor. SE Section 14-24-3w. Roxana Petroleum Corp.'s No. 1 Reed, SW cor. NE Section 34-24-3w, had the Wilcox sand at 4,853 feet, found water at 4,871 feet and drilled to 4,875 feet. It was plugged back to 4,857 feet and shot with 20 quarts. It is pumping 25 bbls. oil and 10 bbls. water. Haley, Garber & Pulse have a bad hole in No. 1 Chevalier, C NW SW Section 6-23-4w, at a depth of

GREENWOOD COUNTY TEST HAS 500 FT. OF OIL FROM TOP BARTLESVILLE SAND

By J. L. Dwyer
Staff Correspondent, Kansas Fields

In the extreme northeast corner of Greenwood County Simmons and others' No. 1 Luther, SE cor. SW, Section 29-22-13, has 500 feet of oil in the top of the Bartlesville sand found at 1,698 feet.

In Kingman County, Port Fleeger and others' No. 1 Greenleaf, NE cor. NE, Section 13-28-7w, has a showing of gas and is shut down at 3,890 feet.

In Butler County, the Magnolia Petroleum Co.'s No. 1 Blakeman, SE cor. SE NE, Section 4-28-6, topped the Wilcox sand at 3,056 feet, and has 1,500 feet of oil in the hole at a total depth of 3,062 feet. It is estimated at 350 bbls. This well is 3 miles south of the Leon Pool.

Cowley County Completions

Carter Oil Co.'s No. 11 Waite, SE cor. NW SE, Section 19-23-3e, is shut down on account of high water. Gypsy Oil Co.'s No. 1 Bishop, SE cor. Section 13-32-4e, sand at 2,961-3,022 feet, shot with 120 quarts, made 75 bbls. J. A. Hull and Emerald Oil Co.'s No. 2 Wallace, SE cor. NE SW, Section 15-32-4E, dry and abandoned at 2,600 feet. Twin State Oil Co.'s No. 1 Werner, SE cor. SW SE, Section 21-31-4E, sand at 2,379-81 feet, made 177 bbls. the first day and 200 bbls. the second day.

Cowley County New Work

Gypsy Oil Co. is rigging up No. 1 Beaks, NW cor. SW, Section 4-34-3E. Roxana Petroleum corp.'s No. 1 Jones, NW cor., Section 21-34-4E, is drilling at 470 feet. J. A. Hull and others are rigging up No. 4 State Land, NE cor. NW SE, Section 15-32-4E. Marland Oil Co. is rigging up No. 2 Graham, SE cor. SW NE, Section 15-32-4E and No. 3, NW cor. SW NE, a rig. William McNabb's No. 1 State land, NE cor. NW SW, Section 15-32-4E, is a rig.

Butler County Completions

T. C. Johnson's No 7 Blakeman, SW cor. NE SW, Section 3-28-6E, sand 3,034-42 feet, made 400 bbls. Empire Gas & Fuel Co.'s No. 2 Worrell, NW cor. SW SE, Section 12-27-7E, sand 2,676-2,708 feet, made 180 bbls.

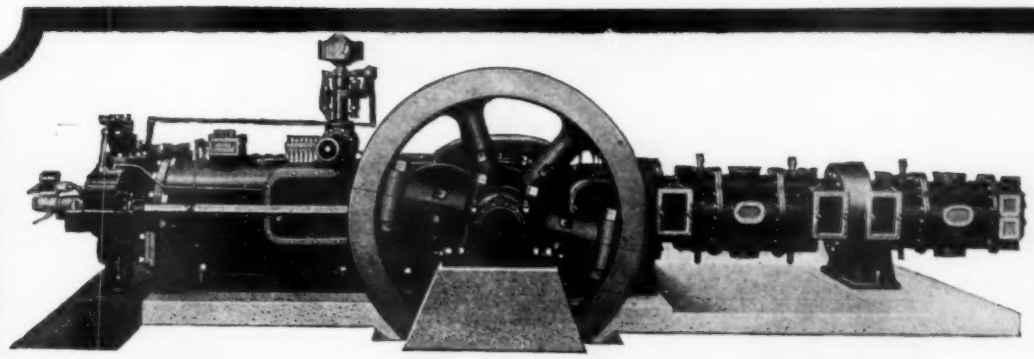
Butler County New Work

Empire Gas & Fuel Co.'s No. 43 Myole, SW cor. NE SE, Section 10-28-4E, is drilling at 415 feet. Same company's No. 12 Love, SE cor. SW SW, Section 20-28-4E, is drilling at 800 feet. Kismet and Stanford are spudding No. 1 Layton, NW cor. SE, Section 7-28-5E. T. C. Johnson is rigging up No. 6 Blakeman, SE cor. NW SW, Section 3-28-6E. Mid-Kansas' No. 2 Blakeman, NE cor. SW SW, Section 3-28-6E, is drilling at 300 feet. Davidson and others' No. 1 French, NE cor. Section 13-28-7E, is a rig. Phillips Petroleum Co. is rigging up No. 2 Cora, NE cor. SW SW, Section 12-27-7. White Eagle and others are rigging up No. 5 Stewart, SE cor. NE SW, Section 12-27-7E. Bogle and Hawkins are spudding No. 1 Spaulding, NE cor., Section 11-26-3E. Barnsdall Oil Co. is rigging up No. 1 Herman, NE cor. NW SW, Section 20-26-3E.

Greenwood County Completions

Eddy Farr and other's No. 1 Hammond, SW cor. NE NW, Section 33-25-10E, is dry and abandoned at 2,125 feet. Skelly Oil Co. has a dry hole at 2,005 feet in No. 1 Hall, NE cor. SW, Section 23-25-11E. Vickers Petroleum

(Continued on Page 98)



Bessemers Never Lie Down on the Job

BESSEMER Compressors should be judged by their performance on the job in order to appreciate fully their outstanding efficiency and long run economy. No matter how hard the work may be, or how long the hours, if it's a Bessemer Compressor it will handle it unfalteringly, and at the same time lighten the burden of the operator and save money for the owner.

Bessemer Compressors have built up their reputation of consistent performance simply because they don't lie down on the job. They deliver a steady stream of power from their power cylinders, and their compressor cylinders have a higher compression efficiency than any other cylinder built.

The actual operating efficiency of any Bessemer Compressor (two cycle or four cycle) is such as to welcome the most exacting comparative tests with any others of a similar size and type. The results of a close scrutiny of Bessemers in operation, plus the thousands of Bessemer service records will convince you that you need the dependability and economy of a Bessemer compressor for your work.

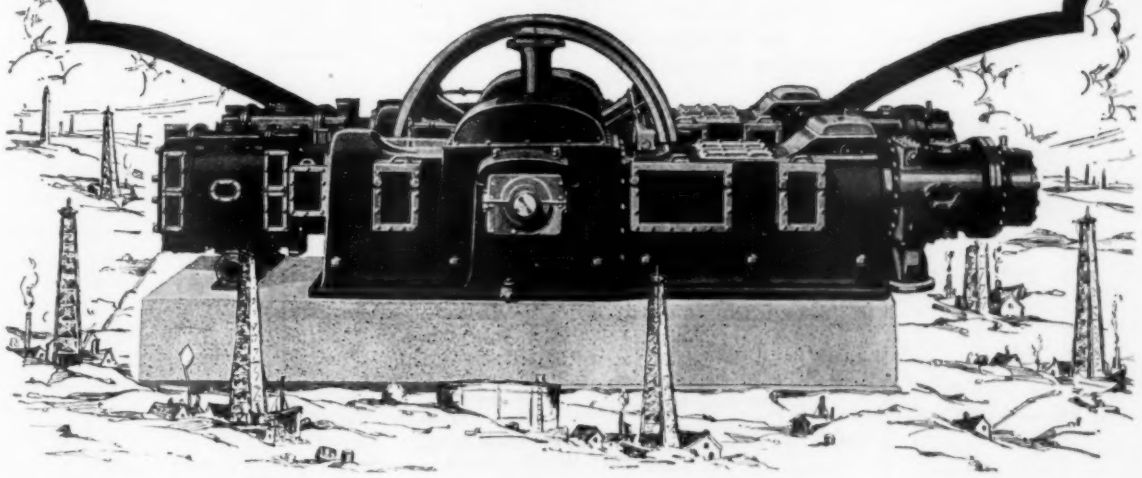
THE BESSEMER GAS ENGINE COMPANY

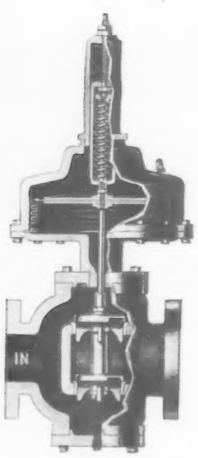
52 York Street ∴ ∴ Grove City Pa.

California Branch—727-728 Standard Oil Bldg., Los Angeles
California Distributor: Associated Supply Co., San Francisco—Los Angeles

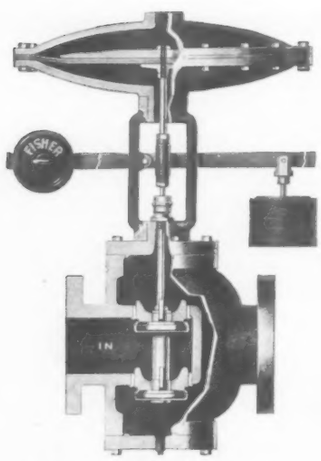
BESSEMER

BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS

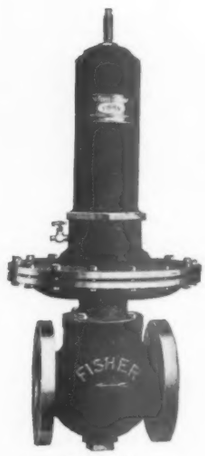




TYPE 86
An ultra-sensitive, all-metal self-enclosed vacuum regulator. Will hold positive line down to ½" of mercury on inlet side.



TYPE 88
Will regulate any vacuum on inlet side. If desired can carry 3 lbs. pressure on inlet side and vacuum on outlet.



TYPE 87
Casing head self-enclosed combination Back Pressure and Vacuum Regulator. Eliminates friction due to dirt, sand, snow or sleet.

Vacuum Regulators

For the control of vacuums under all conditions there is a Fisher Type to meet your requirements.

Thousands of pieces of FISHER Vacuum Control equipment are daily rendering efficient service to some of the largest companies. FISHER equipment is recognized as standard throughout the industry.

The Types shown on this page illustrate some of the more generally used regulators, one of which will meet your needs.

If you do not find listed what you want, write us for complete illustrated catalogue of the entire Fisher line.

THE FISHER GOVERNOR CO.
Marshalltown, Iowa

Distributed by

SMITH SEPARATOR COMPANY
Tulsa S Okla.

2039 East 38th St.,
Los Angeles, Calif.

TEXAS OFFICES:
924 Post-Dispatch Bldg.,
Houston, Texas

1206 F. & M. Bank Bldg.,
Fort Worth, Texas

4,025 feet. Roxana Petroleum Corp.'s No. 1 Bunker, SW cor. NE Section 29-23-4w, is repairing rig at 4,945 feet. Marland Oil Co.'s No. 1 Garber, NW cor. SE Section 19-23-3w, is drilling at 4,870 feet after 1,000,000 feet of gas was struck at 4,790-4,814 feet. Ashby & Barr's No. 1 Swinnery, NW cor. NW Section 3-22-5w, is shut down at 740 feet.

Kingfisher County

Max Kelley and others' No. 1 Kelly, SE cor. SW SW Section 16-19-5w, had a hole full of water and is drilling at 3,540 feet. Marland Oil Co.'s No. 1 Robins, SW cor. NW Section 12-18-5w, is underreaming at 4,160 feet after a hole full of water was found. McKenna & Crawford's No. 1 Strugeon, NE cor. SW Section 27-16-6w, is underreaming at 1,632 feet.

Logan County

The Roxana Petroleum Corp.'s No. 1 McCullough, SW cor. NE SE Section 30-19-4w, is coring at a depth of 3,769 feet. Bryan & Emery are drilling at 600 feet in No. 1 No Name, NW cor SE Section 33-19-4w. The Carter Oil Co.'s No. 1 Rogers, SW cor. NE SW Section 32-19-3w, is cementing casing at 3,847 feet. Franklin Oil Association is drilling at 3,975 feet in No. 1 Moore, SW cor. NE SE Section 28-18-4w. Zingery and others' No. 1 Baker, NW cor. NE Section 5-17-1w, is standardizing at 3,500 feet. T. B. Slick has cemented casing at 2,399 feet in No. 1 Berry, SW cor. SE Section 28-17-1. Blackford Oil & Gas Co. is shut down at 1,675 feet in No. 1 Lair, CSL N half SE Section 28-16-1w. W. R. Ramsey's No. 1 Amsey, SW cor NW Section 24-15-3w, is cleaning out after running casing at 3,000 feet.

OKLAHOMA PANHANDLE

Cimarron County

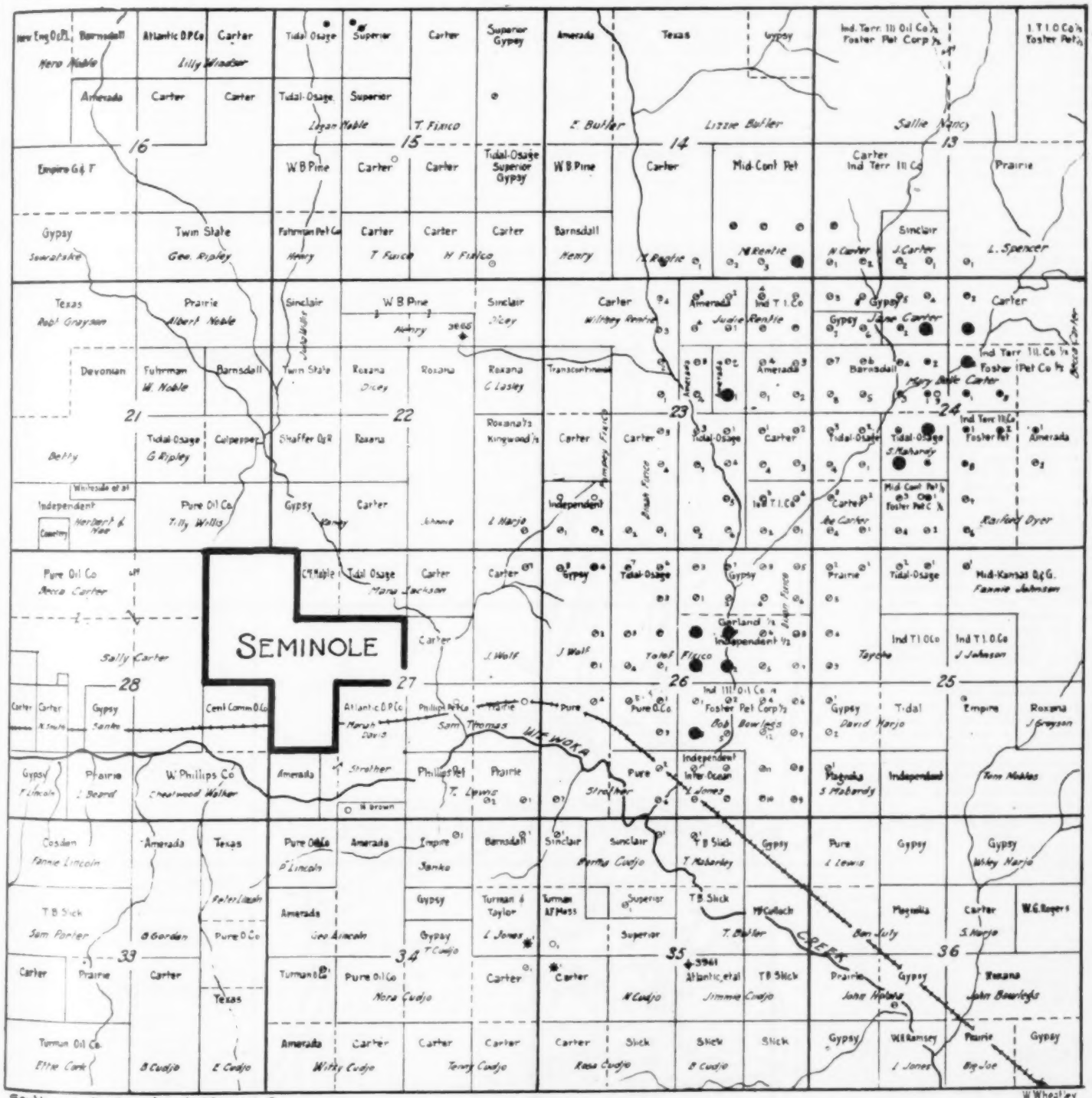
Ramsey Brothers' No. 1 State Land, C NW NE Section 27-5-5, is drilling at 1,532 feet. Fenton, Brookins & Flowers' No. 1 Smith, SW cor. NE NE Section 2-2-9, is spudded and shut down.

Valerius Oil & Gas Co. and others' No. 1 Hovey, SE cor. SE Section 32-5-12, had a show of gas at 3,680-85 feet and is drilling at 3,688 feet. H. F. Wilcox Oil & Gas Co.'s No. 1 Hovey, SE cor. SE Section 21-4-14, is fishing at 3,720 feet. Valerius Oil & Gas Co.'s No. 1 Zea, NW cor. SW Section 18-3-12, is drilling at 3,100 feet. H. F. Wilcox Oil & Gas Co.'s No. 1 Zea, SW cor. SE Section 28-3-13, is fishing at 3,045 feet. Reiter-Foster Oil Co.'s No. 1 Hurliman, SE cor. NW SW Section 9-3-15, is fishing at 3,380 feet. No. 1 Kugle, C NE Section 10-2-11, pulled in the rig. The depth of this well is 3,345 feet. Connelly, Trammel & Dammer have spudded and shut down No. 1 Graves, NE cor. SW SW Section 23-2-18. Haley, Garber & Pulse's No. 1 Ellison, NW cor. SE SE Section 4-1-12, is drilling at 200 feet. Dutton & Hill have a rotary rig up for a test in No. 1 Becker, C NW Section 4-1-13.

Osage County Completions

Phillips Petroleum Co.'s No. 12, SE cor. NE SE, Section 20-26-6, had sand at 2,948-3,008 feet, shot with 120 quarts made 240 bbls. Same company's No. 1, SW cor. Section 21-26-6, sand at 2,938-96 feet, shot with 110 quarts, made 450 bbls. Prairie Oil & Gas Co.'s No. 10, SE cor. NW SE, Section 21-25-6, sand at 2,720-33 feet, shot with 50 quarts, made 10 bbls. Amerada Petroleum Corp.'s No. 1, NW cor. SW SW, Section 5-24-8, Wilcox sand at 2,826-79 feet, 120 bbls. C. F. Lake and others' No. 2, NE cor. SE SW, Section 6-24-8, sand at 2,846-56 feet, shot with 20 quarts, swabbed 100 bbls. Tidal-Osage Oil Co.'s No. 4, NW cor. SW SE, Section 20-24-9, sand at 2,154-79 feet, shot with 80 quarts, made 135 bbls. Oliphant and others' No. 1, NW cor. NE SW, Section 32-24-9, Cleveland sand at 1,565-91 feet, Bartlesville sand at 2,127-60 feet, shot with 120 quarts both sands, made 30 bbls. Pioneer Oil Co.'s No. 3, NW cor. NE,

(Continued on Page 100)



The south end of the Seminole Pool. The large dots show the 12 wells producing from the Wilcox sand.

Pine Island District Again to Front

The Texas Company Completes Well Which Started Off at Rate of 6,000 Bbls. Daily. Settles to 2,000 Bbls.

By James H. Dameron
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Oct. 18.—Caddo Parish in Louisiana cycled around for another of its periodical flashes for operators in the Louisiana-Arkansas division when The Texas Company's No. 1 Curtis, NW NW SE, Section 14-20-15, in the Pine Island district was completed in the Woodbine sand making around 2,000 bbls. of oil daily through a three-quarter inch choke. The well is producing from the Woodbine at 2,193-2,200 feet and is flowing steadily.

Yesterday the well was opened wide and flowed at the rate of 235 bbls. an hour for the first 5 hours, 27 gravity pipeline oil.

The new center of attention in Caddo is a few miles southeast of Pine Island and is in territory opened up several weeks ago when Victor Wenzell's No. 1, SE NE, Section 15, came in from the Woodbine for 1,000 bbls. initial. That well is still producing around 350 bbls. daily, 15 per cent b.s. although its production was cut down considerably when The Texas Company's well started producing.

Wenzell's No. 2 on the Wemple, a direct west offset to No. 1 Curtis, was making around 300 bbls. on the swab Friday but could not be made to flow. Oil stands within 500 feet of the top. It is to be put on the pump. Offsetting No. 1 Curtis to the north is Magnolia Petroleum Co.'s No. 1. The plug has been drilled and casing was being bailed Saturday.

The Magnolia Petroleum Co.'s No. 1, the north offset, was bailed in at 2,200 feet and started off making 15 bbls. an hour Sunday. This well is steadily increasing its flow. Offsetting The Texas Company's well to the west, Victor Wenzell's No. 2 made a head Sunday morning, shooting oil over the crown block. The well is being bailed in an effort to make it flow. Wenzell's discovery well in the new area, a diagonal northwest offset, which came in more than a month ago making 1,000 bbls. and which was flowing around 350 bbls. when The Texas Company's No. 1 Curtis came in, went dead when No. 1 Curtis was permitted to flow unrestrained.

Production Declining

Daily average production for the week went off 1,320 bbls., chiefly because of the decline in the Urania Field in Louisiana which lost 1,000 bbls. Smackover held its own for the seven-day period and the El Dorado Field was the only pool in Arkansas to record a gain. All others in Arkansas lost slightly.

PRODUCTION BY FIELDS

Arkansas

Smackover heavy	117,865
Smackover light	14,020
El Dorado	6,925
Lisbon	7,625
Nevada	1,615
Stephens	1,850
Total	149,900

Louisiana

Bellevue	2,050
Caddo light	9,800
Caddo heavy	2,835
Cotton Valley	7,600
DeSoto and Red River	4,070
Elm Grove	535
Haynesville	9,135
Homer	5,535
Urania	15,445
Total	57,005
Total both fields	206,905
Total last week	208,225
Loss	1,320

Making 80 Bbls. Hourly

The Texas Company's No. 1 Curtis was bailed in Wednesday night. The bailer was run half way down a couple of times and almost to the bottom the third time. Because of insufficient storage the well was immediately closed in. A short while later it was opened and flowed at the rate of better than 60 bbls. an hour the first 12 hours and was again closed in. Additional storage was erected Thursday. Late Thursday night it was again opened and the pressure had built itself up to sufficient power to straighten the riser on the flow tank. It was shut in until pipeline connections could be made and the fourth 275-bbl. tank built.

Friday noon the well was opened and allowed to flow through a three-quarter inch choke. It started off making at the rate of 6,000 bbls. daily but fell off and settled down to steady production 10 minutes later when the head of gas went off. After the first three hours the well was producing steadily at the rate of 80 bbls. an hour. The oil tested 27 gravity and contains less than 2 per cent b.s. The Texas Company is rigging up for the east offset to the well.

Anticipating a little boom for that territory an enterprising storekeeper is building a small restaurant and general store building on a nearby lease. A bunk house is being built near the other building.

Another salient feature for the old Caddo Field was the deep tests, two of which was completed in the Trinity horizon, one making dry gas and the other gas and some oil.

Magnolia Petroleum Co.'s No. 17 Dillon, Section 24-21-15, was the largest of the deep producers. It was bailed in at 3,644 feet making 35,000,000 feet of gas 10,000 bbls. of salt water and 50 bbls. of oil. The gas is rich in gasoline content. No. 16 on the same lease was bailed in at 3,672 feet but made only 5,000,000 feet of dry gas.

No. 17 started off in the identical manner that characterized the Dixie Oil Co.'s deep wells in Pine Island. The Dixie company's deep wells started off making a big volume of gas, a batch of salt water and no oil. Later oil began showing in the water and the wells finally made around 300 bbls. of oil.

Lisbon Field Extended

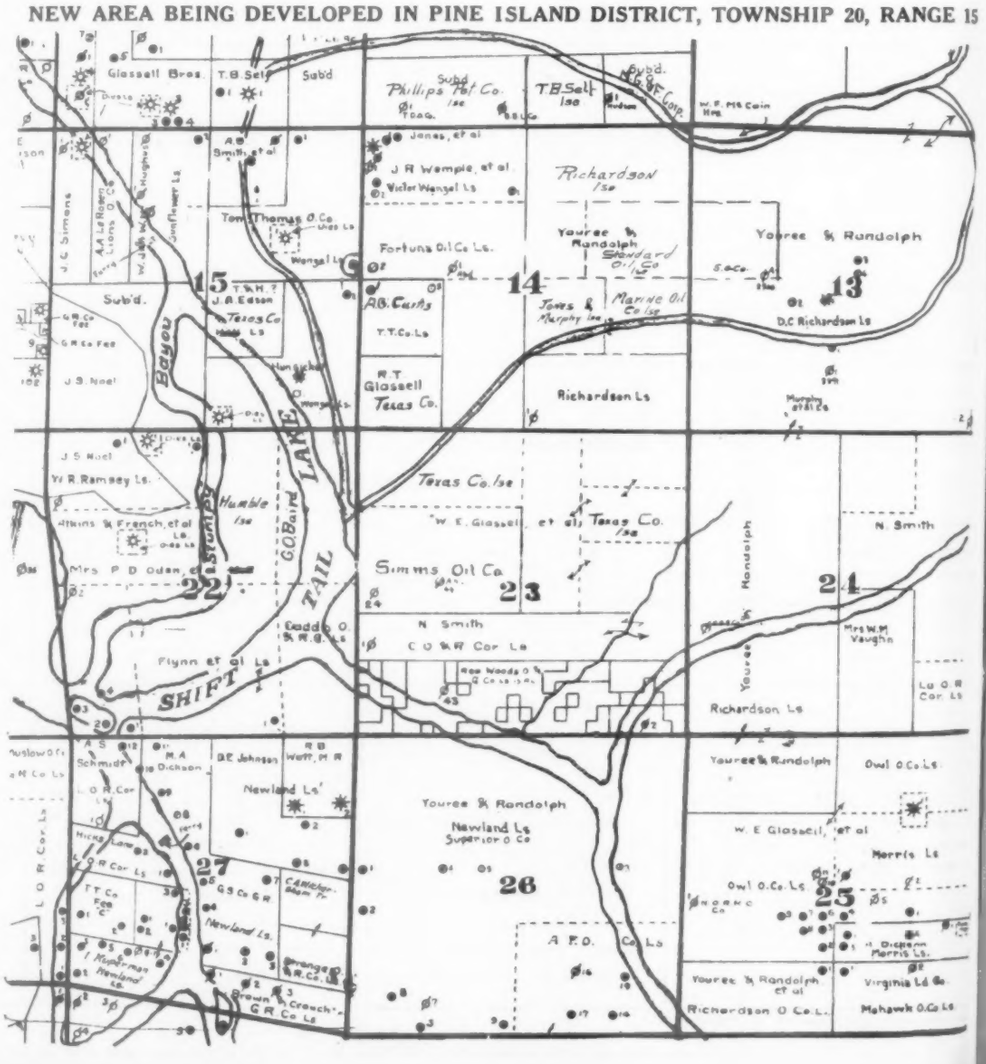
The Lisbon light oil field in Arkansas was extended a short distance to the south by stripper wells on the Unity Petroleum Co.'s Snydor lease in Section 21-17-16. Tests on either side of the field failed to extend production.

Smackover's completions for the week were routine although some of the new wells were large when compared to recent completion reports for that area. The best of the new wells were brought in on the Ouachita Parish side of the field.

Urania scored when two big wells, one in each end of the field, were finished. The north end got a 600-bbl. well and the south end a 500-bbl. well. More than 1,200 bbls. of new production was brought in in Urania last week.

Two 4,300-foot gas wells in Cotton Valley featured that area. Neither well was big in volume but the richness of the gas there makes it profitable to drill for the deep gas sand. One of the wells

NEW AREA BEING DEVELOPED IN PINE ISLAND DISTRICT, TOWNSHIP 20, RANGE 15

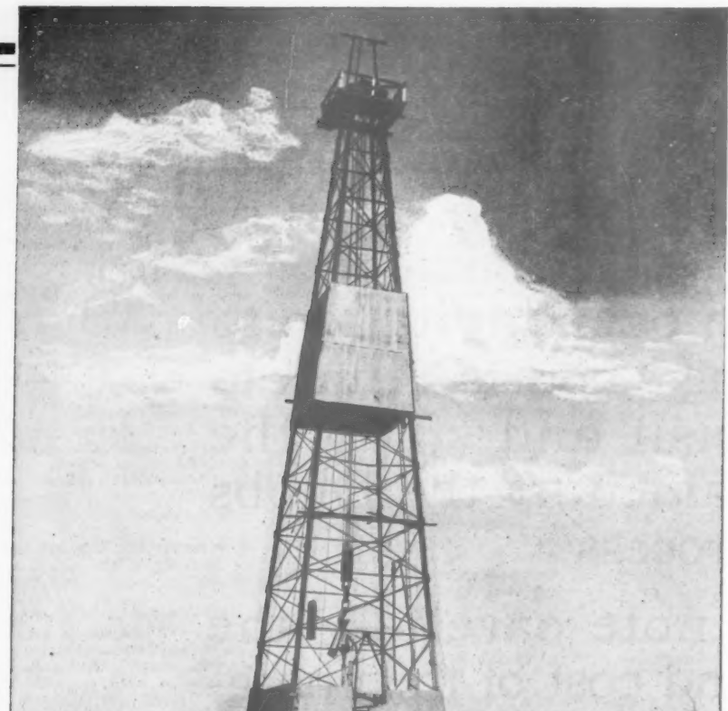


This is an open invitation to any "doubting Thomas" refiner to pay us a visit and study the results obtained by the Dubbs Cracking Process

Let him note carefully the character and cost of the charging stocks used, the cost of conversion and the percentage of gasoline obtained in a single operation

He will not only marvel at what he sees, but he will cease to doubt

Universal Oil Products Company
Owners of the Dubbs Process
310 South Michigan Ave
Chicago, Illinois



MOORE
TUBULAR STEEL
DERRICKS

Double Strength With Reinforcing Legs

Moore 96′ Rotary Derrick with reinforcing legs. Lately used for test drilling in Archer County, Texas, completing the deepest test ever drilled with rotary in that territory. Stood the worst punishment without the slightest trouble. Another Moore derrick, now in use at Big Run, Pa., has drilled to a depth of 7060 feet, and is still going strong.

DEEP TESTS

In deep test drilling, the unexpected is always apt to happen. You will be prepared for every emergency if you use a Moore tubular derrick with pipe reinforcing legs. Such a derrick has nearly double the capacity of a single leg derrick, yet its first cost is very moderate.

After the well is completed, the whole derrick, or the reinforcing legs alone, can be moved and used again and again on other locations for drilling or pulling casing.

For instance, the derrick illustrated above is shown in its third location, in Archer County, Texas. At one time it supported the weight of 54 thribbles of 4″ drill stem hanging in the derrick. On another occasion, the pipe was frozen and the derrick several times parted the 4″ 12½-lb. drill stem. Such instances are typical of the giant strength of Moore Derricks with reinforcing legs.

LEE C. MOORE & CO., Inc.
PITTSBURGH, PENNA.

Tulsa, Okla. Casper, Wyo. Dallas, Texas
Shreveport, La. Parkersburg, W. Va.

was completed by the Humble company and the other by R. W. Norton of Shreveport. Only one small well was completed in the Monroe gas field.

Lawson in Arkansas regained the wildcat interest when Marine Oil Co.'s No. 1 Thompson, Section 10-18-13, cored oil sand at 2,529-31 feet. Eight and one-quarter inch casing is being set to make a test. Simms and Sun Oil Co.'s No. 1 Simmons, Section 9-18-13, blew out at 2,650 feet.

Union County

Simms Oil Co.'s No. 12 Cook, Section 16-16-15, a 50-bbl. pumper in sand at 2,631-38 feet, was the best completion in Union County last week. Humble Oil & Refining Co.'s No. 3 Goodwin, Section 20-17-16, Lisbon Field, was good for 17 bbls. on the pump from sand at 2,085 to 2,128 feet. Imperial Oil & Gas Co.'s No. 1 Goodwin, Section 26-17-16, was abandoned with the casing in the hole at 3,112 feet. Reynolds & Marrs' No. 4 Goodwin, Section 21-17-16, is a 10-bbl. pumper in sand at 2,116-50 feet. Simms Oil Co.'s No. 1 H. O. Murphy, Section 33-16-16, was good for 15 bbls. on the pump in sand at 2,064 to 2,106 feet. Sunny Jim Oil Co.'s No. 3 Flenniken, Section 9-16-15, is pumping 100 bbls. of fluid, 90 per cent salt water, from 2 feet of sand topped at 2,484 feet. In the extreme south end of Lisbon, Unity Petroleum Co. brought in its first production in the Lisbon area. All wells were on the Snydor lease, Section 21-17-16, and each was good for 25 bbls. No. 1 at 2,101-41 feet, No. 2 at 2,118-60 feet and No. 3 at 2,118-50 feet. No. 4 is being standardized.

Six-inch casing was cemented at 2,136 feet at Clark & Greer's No. 1 LeCroy, Section 6-18-15. Sam Cook's No. 9 Tatum, Section 7-16-15, is being cored at 2,670 feet. Casing was cemented at 2,215 feet at Grimes & Jones' No. 10 Van Hook, Section 8-18-14. Hollayfield & McFarland's No. 14 Giller, Section 10-16-15, is being bailed to test at 1,996 feet. Six-inch casing was cemented at 2,110 feet at Humble Oil & Refining Co.'s No. 3 Goodwin, Section 20-17-16. Imperial Oil & Gas Co. is fishing for 1,100 feet of 6-inch at 2,060 feet at No. 4 Parker, Section 21-17-16. Imperial company's No. 1 Stocks, Section 21-17-16, is being bailed to test sand at 2,104-36 feet.

Keen & Woolf's No. 3 Murphy, Section 9-16-15, is shut down at 2,557 feet for orders. Four and one-half inch casing was cemented at 2,612 feet at Louisiana Oil Refining Co.'s No. 1-B Murphy, Section 9-16-15. Lion Oil & Refining Co.'s No. 17-A Mitchell, Section 17-17-16, tested 100,000 feet of gas at 2,095 feet and is shut down for orders. Lion company's No. 1 Werner, Section 21-17-16, is drilling at 1,330 feet. Magnolia Petroleum Co.'s No. 6 Halsey, Section 20-17-16, has 300 feet of oil in the hole from sand at 2,134-64 feet and is waiting for a standard rig. Eight and one-quarter inch casing was cemented at 2,595 feet at Magnolia Petroleum Co.'s No. 4 Hesslar, Section 8-16-16. Murdock and associates' No. 1 Vestal, Section 17-16-15, is coring sand at 2,758 feet.

Natural Gas & Fuel Corp.'s No. 7-B Lawton, Section 10-16-15, had sand at 2,459-69 feet and arrangements are being made to produce the well with air. Ohio Oil Co.'s No. 4 Stocks, Section 21-17-16, is drilling at 1,635 feet. Pure Oil Co.'s No. 7 Bilyew, Section 8-16-15, is pumping salt water from 2,297 feet. Sam Richardson's No. 2-M Murphy, Section 14-16-15, was plugged back to 2,014 feet and operations are being delayed while the bailer and spear are being fished from the hole. Rovenger Oil Corp.'s No. 9 Dumas, Section 9-17-16, had sand at 2,085 to 2,115 feet and is waiting for a standard rig. No. 10, CNL SE SW, is a derrick. Southern Crude Oil Purchasing Co.'s No. 10 Graves, Section 3-16-15, is drilling red shale at 3,133 feet.

Southern Crude Oil Purchasing Co.'s No. 6-B Slaughter, Section 3-17-16, has 150 feet of oil in the hole from sand at 2,075 to 2,130 feet and is waiting for a standard rig. Standard Oil Co.'s No. 4 Reynolds, Section 6-18-15, is pumping water at 2,182 feet. No. 37 Hardy, Section 9-16-15, is bailing sand 6 feet off bottom at 2,392 feet; No. 38 is a derrick. The sand pump is being run to 2,252 feet at The Texas Company's No. 4 C. L. Saxon, Section 4-16-16. Derricks are up for Unity Petroleum Co.'s No. 5 and No. 6 Snydor, Section 21-17-16.

Ouachita County

Gulf Refining Co. completed two of the best wells in Smackover last week. No. 12 Goodwin, Section 32-15-15, was completed in sand at 2,372-80 feet making 300 bbls. of fluid on the pump, 52 per cent salt water and b.s. Gulf's No. 22-A Umsted, Section 33-15-15, had sand at 2,360-68 feet and is pumping 100 bbls. of oil. Lion Oil & Refining Co.'s No. 5 Hays, Section 4-16-15, was put on the beam and is making 100 bbls. from 4 feet of sand topped at 2,344 feet. Standard Oil Co.'s No. 7-B Umsted, Section 32-15-15, topped sand at 2,391 feet, penetrated it 2 feet and is making 60 bbls. on the pump. The Texas Company's No. 7 Neeley, Section 27-15-16, is making 45 bbls. of fluid, 50 per cent salt water and 10 per cent b.s., from sand at 2,245-53 feet.

Drilling operations on the Ouachita side of Smackover continue to dwindle. W. H. Copenhaven's No. 2 Berg, Section 13-15-17, was whipstocked at 1,885 feet and is drilling at 1,900 feet, total depth 2,309 feet. Gulf's No. 1 A-23 Umsted, Section 33-15-15, is being bailed to test 12 feet of sad topped at 2,355 feet. W. R. Keever's No. 2 Neeley, Section 27-15-16, tested salt water at 2,269-71 feet, and casing is being re-cemented. Arrangements are being made to pull the liner at 2,530 feet at Magnolia company's No. 10 Goodwin, Section 5-16-15.

A. Meek's No. 3 Clawson, Section 33-15-17, was plugged back to sand at 2,295 to 2,303 feet. Meek's No. 2 Hughes, Section 28-15-16, is drilling at 1,200 feet. Ohio Oil Co.'s No. 19 Cramer, NW cor. Section 27-15-16, is a rig. J. D. Reynolds' No. 3 Cramer, Section 22-15-16, is drilling at 1,940 feet. Standard Oil Co.'s No. 12-B Murphy, Section 28-15-16, is drilling hard gas sand at 2,296 feet; No. 30 Sid Umsted, 650 feet east and 200 feet south NW cor. SE SE, Section 33-15-15, is a derrick. The derrick was formerly reported as abandoned. Sun Oil Co.'s No. 7 Hardin, Section 27-15-16, is drilling at 1,626 feet. A. M. Sutton's No. 2 Schoolhouse, Section 28-15-16, is drilling at 1,925 feet. In the Stephens area, Magnolia Petroleum Co. has made location for No. 1 Cosden, SE cor. SW, Section 15-15-19. Ohio company's No. 4 Betty Hall, Section 31-15-19, is drilling at 2,118 feet.

Gulf Refining Co.'s No. 1 Huggins, Section 31-17-22, is drilling blue gummy shale at 1,036 feet.

Nevada County

Autrey Oil Co.'s No. 1 McKinney, Section 9-14-21, is standing with 300 feet of oil in the hole from sand at 1,248-63 feet and waiting for a standard rig. Autrey company's No. 1 Wallace, Section 11-14-21, is a rig. Fruen and associates' No. 1 Fuller, Section 6-13-21, is drilling at 800 feet. Humble Oil & Refining Co.'s No. 1 Bodcau, Section 9-15-22, is drilling lime at 3,040 feet. Six-inch casing was cemented at 1,248 feet at Humble company's No. 1 Womack, Section 16-14-21. Ohio Oil Co.'s No. 1 McKinney, Section 9-14-21, is a rig. Wright Oil Co.'s No. 2 Groves, Section 12-14-21, is drilling at 320 feet.

Bossier Parish

Autrey Oil Co.'s No. 15-B Elston, Section 10-19-11, is drilling at 416 feet.

Caddo Parish

The biggest excitement of Caddo was around The Texas Company's No. 1 Curtis, Section 14-20-15, which started off flowing at the rate of 75 bbls. per hour, from 7 feet of sand at 2,193-2,200 feet. The well is making clean oil and maintained that flow the first 12 hours. The only oil well completed in Caddo last week was Gulf Refining Co.'s No. 254 Ferry Lake, Section 22-20-16, which is flowing 75 bbls. from sand at 2,275 feet. Gulf Refining Co.'s No. 1 Byrd, Section 2-19-14, was junked at 3,902 feet. Magnolia Petroleum Co.'s No. 1 Spell, Section 29-21-15, was abandoned at 3,553 feet. The Texas Company's No. 40 C. M. L. Co., Section 23-21-15, was dry and abandoned at 2,321 feet. Unity Petroleum Co.'s No. 4 Crystal fee, Section 24-21-16, was abandoned in salt water sand at 1,084 feet.

Bayou State Oil Co.'s No. 23 Peak, Section 23-22-15, is waiting for a standard rig at 1,040 feet and No. 24 is being rigged. Operations at Dixie company's No. 1 Jolly, Section 27-22-15, are being delayed by a fishing job at 4,413 feet. Dixie company's No. 18 Muslow, Section 18-20-15, is drilling at 2,140 feet; No. 80

(Continued on Page 90)

LAWSON AREA WILDCATTERS WATCH MARINE OIL CO'S NO. 1 THOMPSON

By James H. Dameron

EL DORADO, Ark., Oct. 16.—Marine Oil Co.'s No. 1 Thompson, Section 10-18-13, is holding the interest of Lawson area wildcatters because it is nearing the depth at which Simms and Sun Oil Co.'s No. 1 Simmons, Section 9-18-13, had a gas blowout at 2,650 feet. Phillips Petroleum Co.'s No. 2 Cordell, Section 6-18-13, is being standardized. No other wildcat in Arkansas prompted any excitment and a 3,000-foot test in Bradley County was abandoned. Imperial company's Lisbon deep test was a failure at 3,112 feet.

In Louisiana, J. C. Long's No. 1 Milam, Section 28-13-3w, near Dodson, was being followed with interest. A show of oil was claimed to have been found at 704 feet and 8¼-inch casing was set to make a test. A showing was encountered some distance up the hole but was not sufficient to warrant a test.

Union County

C. H. Allison and associates' No. 1 Howard, SE cor. NE SW, Section 8-19-13, is a rig. Calgo Oil Co.'s No. 1 Primm, Section 9-18-7, cored salt water sand at 2,060-70 feet and is drilling ahead at 2,120 feet. Twelve and one-half inch casing was set at 109 feet and H. L. Hunt's No. 1 Dykes, Section 21-18-12, is drilling ahead at 1,478 feet. Marine Oil Co.'s No. 1 Thompson, Section 10-18-13, is coring at 2,353 feet. H. O. Meller's No. 1 Hill, Section 10-18-16, is drilling at 1,450 feet. Natural Gas & Fuel Corp.'s No. 1 Cordell, Section 6-18-13, is coring at 2,968 feet. Twelve and one-half inch casing was set at 42 feet and Owens and associates' No. 1 Duke, Section 6-17-16, is drilling at 1,335 feet. Peer Oil Corp.'s No. 1 Hollis, Section 36-18-12. Simms Oil Co. and Sun Oil Co.'s No. 1 Simmons, Section 9-18-13, tested salt water at 2,944 feet and is being reamed to the bottom at 3,021 feet. Arrangements are being made to set 12½-inch casing at 244 feet at Southern Crude Oil Purchasing Co.'s No. 1 Hill, Section 5-18-13. A. H. Stoltz' No. 1 Wait, Section 4-18-16, is drilling at 2,788 feet. Tharpe and associates' No. 1 Peck, Section 22-18-13, is shut down at 2,065 feet waiting for a water pump. Phillips Petroleum Co. and associates' No. 2 Cordell, Section 6-18-13, is being standardized. The well made 2,000 bbls. of fluid, 80 per cent water, 20 per cent oil, for two days from sand at 2,967-84 feet when produced with air. Apparently there was not enough water to blow the well and it is being put on the beam. Wingfield and associates' No. 1 McGough, Section 22-17-13, is drilling hard lime at 2,702 feet. Wingfield and associates' No. 1 Morrison, Section 3-19-13, is a rig.

Bradley County

Arkansas Fuel Oil Co.'s No. 1 Arkansas Lumber Co., Section 25-16-12, is a rig. Magnolia Petroleum Co.'s No. 1 Arkansas Lumber Co., Section 33-15-11, is coring water sand at 3,120 feet. McMurray and associates' No. 1 Southern Lumber Co., Section 7-15-11, is drilling at 3,255 feet. Phillips Petroleum Co.'s No. 1 Arkansas Lumber Co., Section 36-16-11, is drilling at 1,840 feet. Wingfield and associates' No. 1 Arkansas Lumber Co., Section 2-16-12, was dry and abandoned at 3,007 feet.

Drew County

McClintock & Goodka's No. 1 Olga,

(Continued on Page 136)

TEN COMPLETIONS IN MEXICAN FIELD BUT ONLY TWO PROVE PRODUCERS

Staff Correspondent, Mexican Fields
George Blardone

TAMPICO, Mex., Oct. 15.—With 10 wells completed in Mexican fields the past week, two finished in the pay with new production, totaling 5,000 bbls resulting. Both completions were in the northern fields: Mexican Petroleum Co.'s No. 116 La Dicha, finished at 1,805 feet, rated good for 4,000 bbls.; and International Petroleum Co.'s No. 282, Lot 5 Cacalilao, finished at 1,710 feet, rated good for 1,000 bbls.

The eight failures, all in the northern fields, follow: Empire Gas & Fuel Co.'s No. 10, Lot 11 W. Maguabes, Panuco, drilled into salt water at 2,200 and 2,025 feet, respectively. In Tamualipas, American International Fuel Co.'s No. 31 Los Esteror is a dry hole at 3,113 feet, and Rich Mex Oil Co.'s No. 2, Lot 26, Altamira, is also dry at 2,350 feet. In the Ebano sector, Mexican Petroleum Co.'s No. 111 Conteca is dry at 2,500 feet, and National Lines' No. 107, same, is dry at 2,350 feet. Mexican Gulf Oil Co.'s No. 52 Chapacao drilled into salt water at 2,320 feet.

September Completions

There were 51 wells completed in Mexican fields during the month of September, which is the smallest number of completions in any one month for some time. Of these completions, only 10 can be entered into the production column, 7 in the northern fields and 2 in the southern fields. The total new production (potential head) resulting is 88,100 bb'ls. Of this volume, 76,000 bbls. can be credited to No. 80 Tierra Blanca, in the south fields, which came in as the month ended. The new production in the northern fields was only 12,600 bbls.

Altamira Spotted

That the Altamira district in Tamaulipas is badly spotted is now amply borne out by the drill so far as this district's first two pay completions are concerned. Consider Mexican Gulf Oil Co.'s (American International Fuel Co., officially) producer, No. 30 Los Esteros, finished, it will be recalled, in the San Felipe at 1,492 feet, and flowing 2,000 bbls. under steady exploitation. The Gulf is drilling two immediate offsets to this well, Nos. 33 and 34. As the week ended, No. 33 was in hard gray lime at 2,146 feet and No. 34 was in gray and brown lime at 2,102 feet. The formations indicate a near approach to the Tamasopa—possibly. In comparing the depth of the immediately juxtaposed producer with the depths of the two drilling offsets hardly any comment is necessary. Again, Rich Mex Oil Co.'s No. 10, Lot 26 Altamira, drilled into the pay at 2,168 feet, Tamasopa limestone claimed. It is a steady

(Continued on Page 135)

Strike Biggest Well in Sunburst Field

Bowbells Completion Estimated From 3,000 to 5,000 Barrels, But Flowing Wild. Heavy Gas Pressure

By F. B. Taylor
Staff Correspondent, Rocky Mountain Area

CASPER, Wyo., Oct. 16.—On the east side of the Sunburst Field, in an area that has been comparatively quiet all summer, the Bowbells Oil Co. struck what appears to be the largest well ever found in Sunburst. The well is on the northwest quarter of Section 33-35 1, and the Ellis sand and production were found at 1,456 feet.

Estimates of the new producer vary from 3,000 to 5,000 bbls., but the well is flowing wild and out of control so no means of measuring the size can be had. The flow is steady, coming out of a 6-inch hole and rising in almost a solid column until the crown pulley breaks the fountain. A heavy wind has been spreading the oil all over the east side of the field and many a visitor coming out to see the big well has had a new suit of clothes ruined by the fine spray that is spreading over the landscape.

The well has a heavy gas pressure with the oil and this has prevented the crew from shutting off the flow. The location of the well is inside the field limits and the big flow that came when the well opened the sand was wholly unexpected as other wells in that part of the field have been rather average producers. The sand was also found in a local high and is thought to be about 20 feet higher at this well than the nearby producers.

The new strike has created much excitement in that part of the field and four new wells that were to have been started next spring are being rigged up to drill at once on adjoining tracts. The field has been dropping steadily in production and during the past week eight wells were completed, of which six are producers and two dry holes. The producers were nominal wells except the Bowbells strike and there have been 11 new wells started the past week.

Much interest is shown in the wildcats outside the field limits as now shown. In Glacier County, west of Sunburst, the syndicate from Sand Point, Idaho, has reached the shales above the Ellis and should be in the lime next week. The Carter Oil Co. is drilling or building rigs for five new wells to the southeast of the main Sunburst Field and these wells are being watched closely.

In the Cat Creek Field in central Montana, the Continental Oil Co. drilled the Government No. 1 to the second Kootenai sand and the well started off at 100 bbls. This well was one of the first wells to be drilled by the Frantz Corp. in the Cat Creek Field in 1919 and the production from the first sand has gradually been declining. The well was doing less than 5 bbls. when it was decided to drill on down and the result will likely cause a large number of the first sand wells there to be sent on down to the second sand.

Wyoming Operations

The well of the Midwest Refining Co. drilling in the Notches Field in central Wyoming, Natrona County, reached a depth of 2,767 feet in Section 3-37-35 and is now shut down until spring. The bit was thought to be in the top of the sand when the well was shut in and there was considerable oil in the hole. The Notches Field is a black oil operation and the production is sent to Casper for making asphalt.

In Section 2-26-90 in the Lost Soldier Field, the Utah Oil & Refining Co. has a good producer in the Frontier sand at 1,930 feet and the well is making 200 bbls. daily.

In Section 9-32-76 in the Big Muddy Field the Continental Oil Co. is drilling in the deep test on the Humphrey lease, and the tools are going through the cap of the second Wall Creek with some gas showing. Depth, 3,072 feet.

In Section 22-12-100 on the Hiawatha Dome, which is located on the Colorado-Wyoming state line and partly in Sweetwater County, Wyoming, the Myers Syndicate drilled into the second Frontier sand at 2,220 feet and found a big gas flow. The well is estimated at 40,000,000 feet daily.

The Wyoming Public Land Board at Cheyenne continued the royalty on state-owned lands in the Big Muddy Field at the same figures as heretofore. At the expiration of the leases held by the companies, the state has the option of placing the royalty at auction and in this case it was considered the present royalty of 15 per cent was all that could be expected so the old lease was renewed at the same terms.

Salt Creek Producers

The Midwest Refining Co. completed 16 new producers in the Salt Creek Field the past two weeks. The Midwest Oil Co. completed six wells as follows: In Section 27-40-79, a second sand producer at 2,208 feet, estimated at 40 bbls.; in Section 14-40 79, a producer good for 30 bbls. at 1,363 feet; in Section 23-40-79, a producer good for 30 bbls., at 1,563 feet; in Section 1-39-79, a 25-bbl. well at 1,812 feet; in Section 35 40-79, a shale producer good for 50 bbls. at 1,577 feet, and in Section 36-40-79, a shale well at 1,640 feet that will do around 40 bbls.

The Midwest Oil Co. and the Wyoming Associated Oil Co., drilling jointly in Section 36-40-79, found a 40-bbl. producer at 1,740 feet that will be pumped after a shot; another well in the same section is making 25 bbls. and a third at 1,845 feet is making 20 bbls.

The Wyoming Associated Oil Co. completed a first sand well at 1,875 feet in Section 2 39-79 good for 15 bbls. The same firm has an average producer in Section 31-40-78 in the second Wall Creek sand at 2,014 feet and in Section 35-40-79 has a good well that started off at 125 bbls. from 1,045 feet by flows and made 309 bbls. on the pump. The same firm also has a second Wall Creek producer good for 50 bbls. at 2,040 feet in Section 30-40-78.

The Wyoming Oil Fields Co. has an average producer in Section 25 40-79 at 1,531 feet and drilled a Lakota sand well in this section to the top of the sand and then shut in the well. In Section 23-40-79 this company has an average producer at 1,547 feet.

Deep Test in Cane Creek

In the Moab district of Utah, the Utah Southern Oil Co. and the Midwest Refining Co. have drilled the well that discovered the Cane Creek Dome to 4,385 feet, and the bit is now in rock salt again. This well found a showing of gas at 4,300 feet, but this was not of commercial size; it found gray sandy shale from 4,335 to 4,350 feet and black shale from 4,350 to 4,360 feet, going into the rock salt at 4,361 feet. The work is progressing slowly and carefully as this is the first deep test ever drilled in that region and the men hope there will be no accident to prevent a complete test of all the horizons down to 5,000 feet.

It now appears that the chances for production on the Cane Creek Dome lie at about 2,000 feet where the discovery well found its flowing oil and gas. A second producing plane may be found at about 3,000 feet though this latter showing is merely a possibility in future locations.

The test on the Shaffer Dome, about 5 miles from the Cane Creek structure, is about ready to set 10-inch casing after underreaming to 2,300 feet. This well has failed to find the producing horizon of the Cane Creek structure that came in at 2,000 feet.

If the Utah structures are true salt domes, and this theory seems to be about to be proven, the Cane Creek well is hardly likely to strike production again, as it should be into the dome core and therefore would continue to drill into rock salt indefinitely. According to Prommel, the stratigraphy of the area is arranged somewhat as follows:

Shale.
Sandstone.
Shale.
Sandstone, massive, white. (Navajo, upper.)
Sandstone, massive, creamy. (Navajo, middle.)
Sandstone, massive, light brown. (Navajo lower.)
Todilto and Wingate sandstones.
Chinle shales and sandstone beds.
Shinarump and conglomerate.
Moenkopie and Cutler series.
Hermosa lime. (Big lime.)
Hermosa shales, gray and black.
Gypsum and salt beds.

It would be interesting from a scientific point of view to know whether the deposition of salt in the Cane Creek structure was made in the regular order and whether it was made during the day or night periods. It is well known that in structures of this kind the original deposits were laid down as depositions from seawater. Therefore as iron oxide will deposit first from seawater, the Cane Creek well should have found some red shales or streaks. These are noticeable by their absence. After the oxide of iron is deposited from seawater, lime is then thrown down and there is evidence of this in plenty in the well record; then gypsum comes, then salt. The salt may be found in two forms, however, as salt crystalizes in different forms if in darkness or light. Hexahydrate salt deposits would prove that the deposits of salt were placed in daylight while reichardtite will be found if the deposit were made in the darkness.

The first deposits of rock salt met with in the Cane Creek well would fall into the classification of the Younger Rock salt strata which sometimes occur above the anhydrite gypsum beds. The Cane Creek well did not report any carnallite, though the crew may have drilled through same without noting any difference from the salt or gypsum beds. This should have come in above the great mass of the older salt and under the gypsum bed.

Operations in Moab Area

In the Lockhart Canyon structure near Moab, the Utah Southern Oil Co. and the Equity Oil Co. has spudded in and will hitch on the beam in the near future. The wildcat in San Juan County, known as Canyon No. 1, is shut down

(Continued on Page 145)

NEW TURNER VALLEY WELL PRODUCES 100 BARRELS OF CRUDE NAPHTHA

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ont., Oct. 16.—In the Turner Valley Field southwest of Calgary, Illinois-Alberta Oil & Refining Co., LSD 14, Section 12-20-3w5, at 3,811 feet depth has a wet gas flow estimated between 3,000,000 and 4,000,000 feet a day, with a crude naphtha production of about 100 bbls. a day. The naphtha is a heavier product than in the Royalite No. 4 gusher, testing about 58. The diamond drill at this depth is about 150 feet in the Madison limestone with a 4-inch hole, and production has been steadily increasing since about 3,760 feet. There has been no trouble with the diamond drill tools freezing while drilling, the drillers pumping heated water into the drill stem; but on resuming in the morning between 15 and 25 feet of ice on top of the oil and gas have at times had to be drilled through. The test was carried down to the Madison limestone with standard tools, and the diamond drill has been used in the Madison. An effort may be made to carry it deeper. Last week a lighted cigaret started a blaze in the sluice box but after a hard fight it was extinguished without serious damage. The Illinois-Alberta is approximately a half mile west of Royalite No. 4.

Vulcan Oils, Ltd., LSD 11, Section 13-20-3w5, is drilling at 4,950 feet, with a gas production estimated around 4,000,000 feet a day or better, and about 50 bbls. a day of light crude. Four 250-bbl. tanks have been set up and a Smith separator is being erected to handle the wet gas. The crude is a 48.5 light green product. The test is being drilled deeper into the sand.

McLeod Oil Co.'s No. 2, LSD 16, Section 1-20-3w5, is drilling past the lost tools at the bottom of the 3,772-foot hole, and is reported within 2 feet of bottom. The Smith separator has been set up and connected and the well is now delivering wet gas through the separator, making about 3,000,000 feet a day. This is likely to be largely increased if the tools are recovered.

New McDougall-Segur Oil Co., LSD 14, Section 12-20-3w5, at 2,454 feet has what looks like the largest production of light crude yet struck in the Dakota sand in this field. A bailing test indicated 72 bbls. a day from a 20-foot sand at this depth, but the flow was decreased temporarily by caving. The well is being cleaned out and deepened preparatory to a prolonged bailing test; drilling was last reported at 2,512 feet, with some gas production, which may flow the oil between the two strings of casing. This is the third well to get light oil in the Dakota this season.

Dutch-America Oil Co., LSD 14, Section 4-19-2w5, has lifted the second last string of fishing tools to 3,500 feet, but removal of the tools from the hole has been delayed by caving. The gas flow has increased to 1,000,000 feet a day with about 1,400 feet of dark green crude in the 4,327-foot hole. Samples bailed indicate the crude is somewhat heavier than the light oil struck in the Dakota sand in this field.

Great West Oil Co.'s No. 1, SE Section 7-20-2w5, is at 5,040 feet with 8¼-inch casing run to 4,954 feet. The drill

(Continued on Page 89)

RUEBLING WIRE LINES

THE Carbic SYSTEM TRADE MARK OXY-ACETYLENE APPARATUS

STANDARD Seamless CASING · DRILL PIPE TUBING

WHITLOCK The Utmost in Rope Value MANILA

Axelson PUMPS · SUCKER RODS FITTINGS

TRANSIT PUMPS

FRICK LIGHT PLANTS BELTING REID

DONOVAN BOILERS

Johns-Manville Packings

Ratigan Pumping Specialties

CAMEL HAIR BELTING

WARREN STEAM ENGINES

J&L CASING · TUBING LINE PIPE

DREADNAUGHT Rotary Equipment

Reid OIL and GAS ENGINES POWERS

Highlights on Donovan Boilers

DON'T let any man tell you that all A. S. M. E. Code Boilers are alike. There are many vital points not covered by the Code—points vital from the standpoint of the man who buys a boiler, pays the fuel bills and the maintenance bills, and expects at all times and under all circumstances, plenty of dry steam.

The dome of a Donovan Boiler is located squarely over the fire box. Why? Because a dome on the barrel or shell of a boiler is limited by the Code to 6/10 of the diameter of the barrel. Donovan has an extra large dome, which contributes generously to the extraordinary supply of dry steam always delivered by a Donovan, and prevents pulling over the water.

The crown sheet in a Donovan A. S. M. E. Code Boiler is equipped with a fusible plug which will fuse and extinguish the fire should the water ever become low in the boiler.

Each Donovan is equipped with a blow-off opening in the bottom of the throat sheet, opening into the bottom of the water leg.

Each Donovan has two feed line connections, located one on each side of the lower rear part of the wagon top. This permits the water to enter the coolest part of the boiler.

Each Donovan is equipped with a back door, bolted on.

If space permitted, hundreds of special features could be pointed out. Suffice it to say that the result of all these features is a boiler that fires quickly, holds a steady steam pressure with little fuel, and gives no trouble whatsoever.

Find out about a DONOVAN before you buy another Boiler.

West of the Mississippi, Stores Everywhere
East of the Mississippi,
The Frick & Lindsay Company

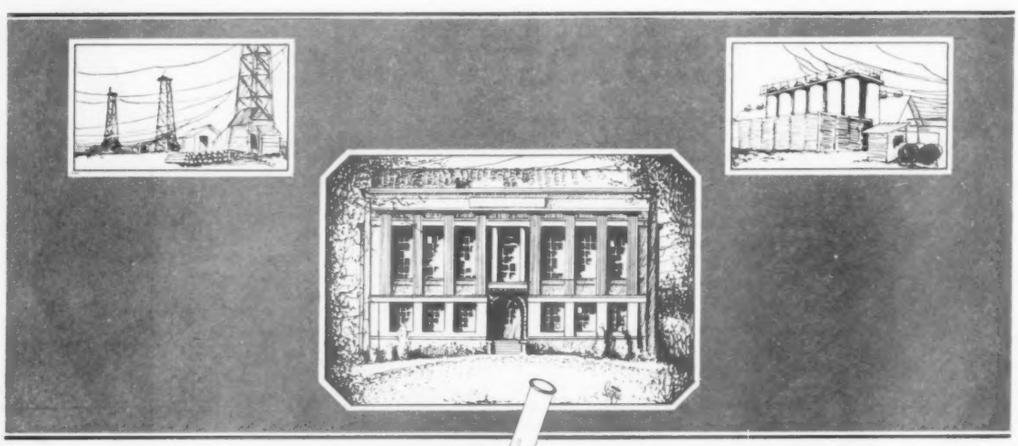
FR

FRICK-REID SUPPLY CO.

Tulsa, Okla. Pittsburgh, Pa.

In Oil Field Equipment-the most HUMAN organization in America

The TRUE VALUE OF NATURAL GASOLINE



A PROGRAM of RESEARCH

has been inaugurated by the Association of Natural Gasoline Manufacturers, under the direction of

DR. E. H. LESLIE and
DR G. G. BROWN

Professors of Chemical Engineering
University of Michigan

for the purpose of determining the true value of *Natural Gasoline* as a component of Motor Fuel.

Its effect on starting, acceleration, detonation, power development, crank case dilution, anti-knock properties, carbon deposits, etc., will be determined in a series of tests in a

Specially equipped laboratory at the University of Michigan.

The results of these tests will be published periodically in the trade journals for the benefit of the entire Petroleum Industry

Credit for this program is given to those manufacturers of *Natural Gasoline* and to those manufacturers of equipment and supplies used by the *Natural Gasoline Industry*, whose generous contributions have made this undertaking possible.

Association Of Natural Gasoline Manufacturers

TULSA, OKLA.

A series of demonstrations under the direction of Dr G. G. Brown will be conducted by this Association in Booths Nos. 33 and 34 at the Convention of the National Petroleum Marketers Association, Atlantic City, October 26th, 27th and 29th.

New Deep Field Opened in Louisiana

Pure Oil Co. Drills Deepest Coastal Producer in Cameron Parish and Well Flows 750 Bbls. of 30 Gravity Crude

By P. L. McGreal
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Oct. 18.—The interest of operators in the Gulf Coast division switched to Cameron Parish, Louisiana, where the Pure Oil Co.'s No. 3 Sweet Lake blew in, making 10,000,000 feet of gas and spraying 200 bbls. of oil, 30 gravity. The depth of the test is 5,891 feet. Sweet Lake is in the southeastern part of the parish, about 30 miles east of Johnson Bayou. Late in the week the well was reported flowing 750 bbls. The Pure Oil Co. has been exploring the Sweet Lake Region for more than a year. Both previous tests were also deep, and No. 2 produced oil enough to furnish fuel for some time before it sanded. The well proves the contention of those who asserted that oil-bearing sands in the south Louisiana parishes would be deep seated. The Lockport district, near Lake Charles, where the Vacuum and Gulf companies jointly developed production, is another proof of the existence of deep sands in the marshy regions of southern Louisiana.

Cameron Parish borders on the Gulf of Mexico in the southwestern part of the State. It is a low, marshy region. Johnson's Bayou section and Hackberry Island are two spots heretofore considered as prospective oil territory, and much wildcat work has been done at both places. At present the Humble Oil & Refining Co. and the Sun Oil Co. are jointly drilling a wildcat test at Johnson's Bayou below 4,275 feet. The Yount Lee Oil Co. has two tests shut down at Hackberry Island, suspending work when the company found it necessary to concentrate its attention on the deep sand section at Spindletop.

The Pure Oil Co. has a large block of acreage around Sweet Lake, a shallow body of water in which the well is located. The well is the deepest producer to date in the entire Coastal region. The Vacuum-Gulf Co.'s joint No. 4 Lock-Moore in the Lockport Pool is deeper, drilling now around 6,140 feet. It showed some gas at 6,010 feet, which makes it the deepest hole to show gas. These interests abandoned a test late last year at 6,111 feet. The deepest producer previous to the Pure Oil Co.'s No. 3 was the Vacuum-Gulf's joint No. 1 Freidberg and Wolf, completed last August at 5,477 feet. It is still heading 300 bbls. per day.

Another Wildcat Shows

The Gulf Production Co. has a deep wildcat test that is showing oil and gas at 5,100 feet. It is No. 2 Bordages, off the Fannette Dome, Jefferson County, southwest of Beaumont. The bit went into 19 feet of sand showing oil, 36 gravity. The crew is now fishing for the drill stem stuck in the hole. The Gulf company's No. 9 Thomas there is drilling around 3,410 feet. The Fannette Dome is a geophysical discovery, both the torsional balance and the seismograph having been used to locate the saline uplift. The Gulf company has practically all the acreage around the dome, but the Sun Oil Co., Atlantic Oil Producing Co., Roxana Petroleum Corp. and small operators hold some acreage on the outside. The Gulf company has drilling tests on and around the saline uplift for almost one year.

Wells completed during the week total 29, of which 3 were failures and 2 salt water holes that may be deepened and developed into producers later. Six tests were bailing at the close of the week. The new production aggregates 14,731 bbls., compared with 31,670 bbls. for the week of October 9. The Spindletop Pool furnished 9,000 bbls. of the total, against 22,175 bbls. the previous week.

The results of the week's work summarizes as follows:

Pool—	Comp	Prod.	Dry	S.W.	Bail.
Batson	3	191	..	..	..
Blue Ridge	1	700	..	..	..
Edgerly	1	15	..	..	..
Goose Creek	1	100	..	..	..
Hull	3	960	1	..	..
Jennings	3	20	..	2	1
Lockport	0	.....	..	..	2
Orange	2	100	1	..	..
Pierce Junction	3	1,600	..	..	1
Spindletop	5	9,000	1	..	..
Sour Lake	2	1,400	..	..	1
Vinton	4	445	..	..	1
Miscellaneous	1	200	..	..	..
Total	29	14,731	3	2	6
Last week	29	31,670	11	6	8

Estimated Daily Average

The estimated daily average gross production for the week of October 16 is placed at 174,656 bbls., an increase of 1,401 bbls. over the previous week. Compared with last week, Spindletop increased 1,226 bbls, Goose Creek 195 bbls., Hull 1,130 bbls., Batson 150 bbls., Sour Lake 140 bbls. and West Columbia 40 bbls. The Lockport Pool decreased 320 bbls., Orange 255 bbls., Pierce Junction 185 bbls. and Vinton 430 bbls.

The estimate for each pool is as follows:

District—	Gross Bbls.
Boling	2,800
Batson	1,600
Blue Ridge	1,600
Barber Hill	1,150
Big Creek	1,060
Dayton	170
Damon Mound	810
Edgerly (La.)	760
Goose Creek	10,150
Humble	4,585
Hull	22,630
High Island	112
Jennings (La.)	1,180
Lockport (La.)	3,800
Markham	170
Nash	350
Orange	7,570
Orchard	70
Pierce Junction	3,795
Piedras Pintas	200
Spindletop	80,829
Saratoga	1,325
Sour Lake	9,590
South Liberty	3,810
Vinton (La.)	5,725
Welsh-Anse La Bute (La.)	75
West Columbia	8,620
Miscellaneous	120
Total	174,656

Southwest Fields

The estimated daily average gross output of the Southwest fields for the week of October 16 is placed at 44,714 bbls., against 44,970 bbls. last week.

Luling decreased 250 bbls., Mirando 70 bbls. and Lockport about the same.

The estimate for each field is as follows:

Field—	Gross Bbls.
Luling	21,000
*Mirando	17,240
Somerset	2,065
Calliham	50
Rockdale-Minerva	955
Lockhart	3,404
Total	44,714
Grand total	219,370
Grand total last week	218,225
Increase	1,145

*Includes Webb, Jim Hogg and Zapata Counties and the Cole-Bruni district in Duval.

Another Louisiana Well

A second well was completed in south Louisiana late in the week. It is the Vacuum-Gulf companies' joint No. 1 Bayou D' Inde in the Lockport Pool, flowing 1,500 bbls. at 3,750 feet. The gravity is 24.2 and temperature 82 degrees. The Vacuum-Gulf's joint No. 1 Farquhar there is making gas at 3,725 feet, and joint No. 10 Miller is bailing at 5,425 feet.

Vacuum-Gulf's No. 6 Miller is fishing. A location has been made for No. 12. No. 4-A Farquhar is drilling around 1,235 feet. No. 3 Friedberg & Wolf is at 2,800 feet. No. 2 Bayou D' Inde is at 2,165 feet. No. 4 Bordages is a location. No. 4 Lock-Moore is drilling around 6,140 feet.

In the Vinton Pool, the Gulf Refining Co.'s No. 5 F. H. Gray is making 250 bbls. at 2,100 feet. The Vinton Petroleum Co.'s No. 30 Gray is a 15-bbl. well at 2,460 feet. The Texas Company's No. 17 Vincent is good for 150 bbls. at 2,100 feet. The Edgerly Petroleum Co.'s No. 3 is pumping 30 bbls. at 3,500 feet. The Vinton Petroleum Co.'s No. 22 Rescue is bailing at 2,150 feet.

The Gulf Refining Co.'s No. 2-A is drilling around 3,455 feet, and No. 3 Gray will be deepened. The Texas Company's No. 2-C Gray is drilling at 4,235 feet. No. 16 Vincent is at 2,190 feet. Marrs McLean's No. 1 G. N. G. is at 1,235 feet. The Edgerly Petroleum Co.'s No. 11 Vincent is idle. The Vinton Petroleum Co.'s No. 57 Gray is at 2,365 feet. No. 18 Vincent is drilling at 1,186 feet. Ratcliffe and others' No. 1 Perry is bailing at 3,360 feet.

In the Jennings Pool, the Jennings Oil & Gas Co.'s No. 1 Noble will make a pumper at 1,890 feet. The General Petroleum Co.'s No. 6 fee and F. I. Getty's No. 11 Chicago-Jennings are both salt water wells, the former at 1,705 feet and the latter at 1,400 feet. The Texas Company is bailing No. 1 Bayne, a deep test for the pool, at 4,250 feet.

The Texas Company set casing in No. 103 Latrielle at 1,850 feet.

In the Edgerly Pool, the Savoy Oil Co.'s No. 2 Hill, a workover, is pumping 15 bbls. at 2,950 feet.

The Rex Petroleum Co.'s No. 3 Hunter is drilling at 3,175 feet. The Edwards Oil Co.'s No. 4 Landry will make a pumper at 2,190 feet.

Sour Lake Pool

In the light gravity, deep sand section on the southwest side of the Sour Lake Pool, the Gulf Production Co.'s No. 1 Cora Lee came in at 3,758 feet, flowing 800 bbls. 36 gravity oil. The Humphreys Corp.'s No. 4 Basharn is flowing 600 bbls. J. F. Bashara's No. 3 fee is bailing at 3,740 feet.

The Gulf Production Co.'s No. 2 Cora Jackson is at 3,765 feet, and No. 3 is below 3,545 feet. No. 4 is below 2,500 feet. No. 1 Thompson is around 1,235 feet. The Humphreys Corp.'s No. 1-C Bashara is at 1,310 feet. No. 1-B Basharn is at 3,976 feet. No. 5-B is at 2,100 feet. No. 1 Gordon is drilling around 1,355 feet. No. 1 Giescke is below 2,435 feet, and No. 2 Oxford-Kelly is at 3,685 feet. The Hull Oil Co.'s No. 1 Hautier is at 1,565 feet. The Orange Petroleum Co.'s No. 2 Merchant is drilling at 3,355 feet. Eunice and others' No. 3 Eunice is at 3,865 feet. The Texas Company's No. 304 fee is drilling around 1,875 feet, and the Lake View Oil Co.'s No. 51 Hardin is at 540 feet. The Gulf company has a location for No. 2 McLean.

In the light gravity, deep sand section on the west-northwest side of the Pierce Junction Dome, the Navarro Oil Co.'s No. 1 Humble heads 200 bbls. of oil and considerable gas at 3,355 feet. J. F. Bashara's No. 2 Bender, deepened 50 feet, is flowing 900 bbls. at 3,470 feet.

The Rio Bravo Oil Co.'s No. 4 P. F. Settegast is at 3,765 feet. No. 5 is drilling below 2,455 feet. No. 1-B is at 1,655 feet. The Marland Oil Co. set casing in No. 1 Prudential at 3,710 feet. J. F. Bashara's No. 3 Bender is a derrick. The Gulf Production Co.'s No. 1 Jones is at 3,760 feet, and No. 1-A Jones is at 3,765 feet. The Humphreys Corp.'s No. 1 Leggitt is at 2,545 feet. Eunice and others' No. 1 Bullock-Nash is drilling at 2,875 feet. The Texas Exploration Co.'s No. 10 Dooley is below 3,765 feet.

On the east side of the dome, the Gulf company's No. 19 Taylor sanded after heading 500 bbls. at 3,950 feet. It is being cleared. H. R. Cullen's No. 6 Howe is bailing at 4,060 feet.

Liberty County Pools

In the Hull Pool, the Republic Production-Houston Oil Co.'s joint No. 39 Dolbear is making 400 bbls. at 2,000 feet. The Empire Gas & Fuel Co. has a 400-

(Continued on Page 98)

HOPES OF SPINDLETOP EXTENSION REVIVED BY 1,500-BBL. PRODUCER

By P. L. McGreal

BEAUMONT, Tex., Oct. 18.—Hopes of an extension of the deep sand section of the Spindletop Pool were revived during the week when Seiss and others brought in No. 1 Price, flowing 1,500 bbls. initially. It is located a few locations southeast of the Rio Bravo Oil Co.'s T. & N. O. lease. The Magnolia Petroleum Co. is drilling No. 1 fee on its tank farm at 4,135 feet, south of production. The Sun Oil Co.'s No. 1 Price, between the Magnolia company's test and the Gulf company's Jack-Duff lease, which came in last week heading 175 bbls. at 3,468 feet, has dropped to 95 bbls. Therefore, operators believe the pool has reached its limits on the south side. The west and north sides have been defined for weeks.

In addition to the completion on the Price, the Yount Lee Oil Co. finished No. 11 Fee, flowing 5,000 bbls., and abandoned No. 9 fee below 4,600 feet. The Gulf Production Co.'s No. 6 Oakwood is making 2,500 bbls. at 3,417 feet. The Deep Sand Oil Co.'s No. 2 Howell is pumping 100 bbls., 50 per cent water, at 3,240 feet. Paggi & Co.'s No. 2 Gordon will pump at 3,325 feet, as will the Gulf Production Co.'s No. 5 Weed at 3,275 feet.

A check-up of production in the deep sand area shows the following:

Company—	Dy. Ave.
Yount Lee Oil	28,444
Gulf Production	25,379
Rio Bravo Oil	18,400
Atlantic Oil Producing	7,214
Sun Co.	202
Unity Oil	100
Turnbow Oil	40
Deep Sand Oil	50
Total	80,829

Deep Sand Disappointing

The deep sand wells are disappointing, that is below 4,200 feet. The Gulf company got the first deep sand producer on its Weed lease at 4,244 feet in August, and it is still credited with around 2,000 bbls. per day. More than a dozen holes have been drilled to that depth and below since, but all were either small wells or water holes. The activity there has been centered on approximately 20 acres, cut into small strips, held by different operators, which resulted in a spirited offset drilling campaign lasting all summer.

Rigs are gradually being withdrawn, and each week witnesses a decrease in

(Continued on Page 139)

Randado Takes Lead in Southwest

Of 10 Oil Wells Completed in the Mirando Area, Six Were Located in Jim Hogg County Pool. Average 90 Bbls. Each

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Oct. 18. — Ten oil wells completed in the Mirando Field of the Laredo district last week added only about 900 bbls. total to the production, or an average of 90 bbls. to the well. Of this 555 bbls. was new production from six wells in the Randado Pool in Jim Hogg County. The Bruni tract extension of the Aviator Pool had two completions, both on the Gibson Oil Corp. and J. E. Walsh lease, No. 16 at 1,737 feet being estimated at 150 bbls. and No. 17 at 1,738 feet being estimated at 90 bbls. Another oil well was No. 46 Holbien of the K. & S. Corp. in its field northeast of the Henne, Winch & Fariss Pool, which at 2,131 feet is estimated as a 40-bbl. well. The Magnolia Petroleum Co., in the Henne, Winch & Fariss Pool, got a 60-bbl. well in No. B-14 Martinez, Survey 276, at 2,078 feet.

There were no spectacular or important completions. There were three gas wells completed during the week. O. A. Topham on Block C of Survey 2,084, on the west edge of the Aviator Pool, got a 5,000,000-foot gas well at 1,548 feet. Associated's No. 1-B Webster, nearly a half mile west of the discovery oil well, was completed at 2,585 feet and is a small gas well of 500,000 feet.

Of the six oil wells completed in the Randado Pool, Johnson and others' (American Well & Prospect Co.) completed three. No. 13 Palacious in Block 13 of Survey 291 at 1,281 feet is estimated at 150 bbls., No. 16 in Block 2 of the same survey at 1,295 feet is estimated at 150 bbls. and No. 17 on Block 3 at 1,285 feet is estimated at 100 bbls. These three were the best producers of the field and account for 400 of the 555 bbls. of new production. Simms Oil Co.'s No. 15 Palacious in the same area at 1,289 feet is a 25-bbl. well. Magnolia Petroleum Co. completed No. 9 Merchant State Bank on Survey 415 at 1,238 feet and it is estimated at 30 bbls.; and E. L. Smith Oil Co. and C. O. Maddox's No. 13 Palacious at 1,291 feet is estimated at 100 bbls.

A feature of the developments in the Randado Field is No. 12 Palacious of the Magnolia reported a week ago at 800 bbls. That was a very low estimate. It actually made much more according to reliable information. It is on the east edge of the pool where small wells were the rule and it seems to indicate that there are possibilities of big production beyond.

Cole Field—Duval

O. W. Killam's No. 6 Lopez, Survey 319, is drilling at 2,500 feet. Location is 2,050 feet from east line and 150 feet from north line.

Piedras Pintas

Humble Oil & Refining Co.'s No. 1 Becher, Survey 531, is standing in shale at 3,118 feet and has ordered casing set and test. Gulf Production Co. has derrick up for No. 1 Tinney, on Survey 8, 840 feet from the south line and 100 feet from the east line.

Randado Field—Jim Hogg

Grayburg Oil Co.'s No. 7 Weil, is coring at 1,269 feet in Survey 81, Block 15; No. 8 Weil, same survey and block, is drilling at 700 feet. Johnson and others' No. 13 Palacious, Survey 291, Block 3, is testing at 1,269 feet; No. 15 Palacious, Block 2, is setting casing at 1,783 feet; No. 17 Palacious, Block 3, has set casing at 1,775 feet. M. J. Bashara, in Survey 81, Block 8, has made location for No. 3 Weil, 510 feet from the north line and 450 feet from the east line. Simms Oil Co. is moving on for No. 6 Weil, Survey 81, Block 8. Magnolia Petroleum Co. has spudded in No. 9 M. S. Banks in Survey 415, and is drilling at 1,238 feet; No. 13 de la Garza, Survey 291, Block 6, is drilling at 1,300 feet. E. L. Smith-Maddox, in Survey 291, have set casing at 1,289 feet in No. 13 Palacious. Alworth Brothers, in Survey 39, are rigging up 150 feet from the northeast and southeast lines for No. 1 Garza. D. C. Smith, in Survey 83, Block 1, in No. 1 Weil, is drilling at 1,552 feet. Passed cap with streaks of sand under cap.

Henne, Winch & Fariss

Magnolia Petroleum Co.'s No. 14 Killam-Martinez, in Survey 276, have set casing at 2,072 feet; No. 15 "B" Martinez is rigging up. Rydal-Rycade interests, in Block 12, Survey 1, in No. 4 Vela, is drilling at 800 feet.

Kitselman & St. Albans

K. & S. Corp.'s No. 46 Holbien, Block 13, Survey 15, tested small amount of oil at 2,129 feet and is standing; No. 48 Holbien, Survey 11, Block 5, is drilling at 1,500 feet; No. 49 Holbien, Survey 11, Block 11, spudded in last week and is drilling at 448 feet; No. 50 Holbien, Survey 16, Block 19, is coring at 1,700 feet.

Aviator Field—Webb

O. A. Topham's No. 1 Bruni, Block "C", Survey 2,084, 150 feet from the southeast corner, is testing sand at 1,548 feet. Casing was set at that depth. Gibson Oil Co.'s No. 16 Bruni, west half of Block 13, is testing at 1,732 feet; No. 17 Bruni is testing at 1,726 feet. Sun Oil Co. has drilled in No. 7 Bruni, Block 44, 1,600 feet to east line and 1,120 feet to north line, and got a dry hole. Crown-Central has derrick up for No. 20 Bruni, 450 feet to north and west lines, in Block 15. Straight Eight Oil Co., on Puig ranch, is drilling at 1,000 feet in No. 1 Puig. Associated Oil Co., south half of Block 44, has spudded in No. 4 Bruni, 1,700 feet to east line and 150 feet to north line and is drilling at 1,420 feet.

Mirando—Old Field

Crown Central Oil Co.'s deep test, No. 10 Garcia, Survey 606, Lot 56, is drilling at 3,364 feet; No. 13 Garcia, Block 27, 150 feet to north and east lines, is rigging up.

Carolina-Texas Field

Associated Oil Co.'s No. 1-B Webster, Survey 684, has set casing at 2,572 feet. Production depth of discovery well was 2,609 feet. The Texas Company's No. 2 Webster, in same survey as the discovery well, 810 feet to west line and 150 feet to north line, at 3,620 feet, has been ordered abandoned. Hazlitt-Simmons, Survey 335, Block 11, cored sand in No. 1 de la Garza, at 2,728 feet and is testing. Killam-Winch, Block 11, Survey 336, in No. 2 de la Garza, 150 feet to south and east lines, tested salt water at 3,108 feet and is plugging back. Hamilton & Warren's No. 1 de la Garza, Block 22, Survey 335, corrected location, 150 feet to south line and 150 feet to west line. Magnolia Petroleum Co.'s No. 1 Webster, NE NW, Survey 684, 150 feet to south and east lines is at 3,049 feet. S. O. M. Oil Co. (Morgan-O'Hern & Seacord) E half SW NW, Survey 684, is abandoned dry. O. W. Killam's de la Garza, Survey 678, is drilling at 3,050 feet. Location is 1,853 feet to the south line and 150 feet to the west line. Houston Oil Co.'s No. 1 Benavides, Survey 683, is drilling at 750 feet, 1,035 feet to north line and 182 feet to east line. Alexander and others are to make location in Survey 670 or 672 for No. 1 Moglia. M. & N. Drilling Co. has derrick up for No. 1 Vela, Block 12, Survey 1,012, 200 feet to northeast and southeast lines.

Cole Gas Field

Associated Oil Co. is drilling a water well on S. Benavides tract, and will then spud in No. 1 Benavides.

SOUTHWEST WILDCATS

O'Hern & Seacord's No. 1 Benavides in Duval County, 5 miles southeast of Bruni on the Texas Mexican Railroad, which came in a big gas well at 1,765 feet spraying oil, more than a month ago, is now making about 35 bbls. of oil every morning before being put to work to furnish gas for fuel to two rigs. It is the most likely spot for a new pool to be opened. It is 6 miles south of the Cole field and at about the same depth as production in the Cole Field. The Texas Company, which took over No. 1 Dinn in the southeast corner of Survey No. 668, about 6 miles north of the Cole Field, is testing after coring 4 feet into a sand showing oil at 2,516-20 feet. These two tests are the feature of interest in the Laredo district at this time.

O'Hern & Seacord have their No. 1 well on a ¾-inch choke and use the gas for fuel during the daytime. After standing all night the pipes are full of oil, and in about seven minutes the well makes around 35 bbls. of oil. No. 2, which is 450 feet to the north, is coring at 1,840 feet and has had a series of sands since 1,780 feet. Two attempts to set 8¼-inch casing failed, and the well is to be drilled for a deep test. No. 3, located 300 feet south of No. 1, is down about 400 feet.

The Texas Company had taken over the No. 1 Dinn from the National Refining Co. only a day or two before it cored the oil sand at 2,516-20 feet. It is a little over a half mile northwest of the Simms Oil Co.'s No. 1 Dinn, in the center of Survey No. 666, which got about 7,000,000 feet of gas. Simms drilled a half mile to the southeast of its gas well and got nothing.

Gonzales County Tests

Two wells in Gonzales County which were attracting attention have not yet been set and tested, due to delay in getting casing. Martin Oil & Development Co.'s No. 1 Preston at Cheapside is at 1,500 feet with a little gas and oil showing, and Scott & Kercheval at Smiley in No. 1 Billings at 1,182 feet with an oil showing is waiting for casing.

Activity is promised soon for McMullen County. Magnolia has bought the Mary E. Teal ranch of 5,647 acres, about 5 miles west of the Callihan oil field. There is considerable additional lease-taking in that county. Another place where activity is expected to break out is in the southern part of Zapata County around the old Charco Redondo shallow field. Starr County drilling has been delayed, due to titles, but a great deal of this has been fixed up and drilling is starting. Magnolia has bought a half interest in the north end of Porcion No. 80, north of Rio Grande City, from the Simms Oil Co. with a well already started.

Duval County

Daniel & Best in Block 1, Subdivision 3, 150 feet from southwest line and 300

(Continued on Page 137)

WELL FLOWING 10 BARRELS AN HOUR REVIVES INTEREST IN ARTESIA POOL

By Special Correspondent

ARTESIA, N. Mex., Oct. 16.—Flowing at the rate of 10 bbls. per hour the Pueblo Oil Co.'s No. 1 in center Section 33-17-28 has revived interest in the Artesia Pool. After being shot at 2,000 and 2,100 feet it started flowing by heads. Tubing and rods have been run, the latter acting as an agitator, as the well is making sufficient gas to flow steadily. This well is in the north extension and a mile distant from any other producers. Four offsets are to be drilled.

A number of wells will in all probability be deepened in the proven area, as an additional pay has been picked up in No. 14 of the Maljamar Oil & Gas Corp. in Section 28-18 28 at 2,465 feet. The hole is now standing 1,700 feet in oil.

In the Maljamar Field, the Ohio Oil Co.'s No. 1 on the William Mitchell permit in Section 18-17-32 is shut down at 2,535 feet with a broken engine. A good showing of oil was picked up in this test at 2,485 feet, correlating with the 2,540-foot showing obtained the Maljamar producer.

Offsetting the Maljamar producer 660 feet to the north, No. 1 of this corporation on state acreage, is making good time, the hole being down 1,200 feet, with the salt topped at 950 feet.

On the Grace Mitchell permit the Maljamar Corp.'s No. 1 in the SW SW Section 5-17-32 is drilling up a casing shoe, the bottom of the hole being 830 feet.

Delayed Work

A lost fishtail at 700 feet has delayed work on the Cap Rock Oil & Gas Corp.'s No. 1 in Section 11-16-32. Henderson, Dexter & Blair in Section 34-17-33 are trying to find a seat for their casing, due to the hole caving. This well is down 825 feet.

South of the Maljamar producer, Bruce Sullivan is running casing in No. 1 in Section 1 18-31, to be landed at 2,465 feet.

Between the Artesia and Maljamar Fields, Wooley, Jones of Los Angeles are rigging up for their second well, to be drilled in the C SW Section 21-17-30 on the McIntyre permit. The log of this company's No. 1 on the Beeson permit showed the formation in that well to be running 300 feet higher than in the Skelly Oil Co.'s producer. Considerable acreage has been changing hands to the north of the Beeson test. The Humble Oil Co. during the week purchased 80 acres out of Section 16-17-30.

After working three weeks on the Ingelfield Bridges test in Section 4-17-34, the Stovall Drilling Co. was forced to abandon efforts to loosen a string of frozen casing, and has cemented the hole at 1,385 feet.

Drilling Report—Eddy County

Decum Development Co.'s No. 1 Vandagriff, NE SE Section 5-17-28, making 1,000,000 feet gas from 1,300-foot sand; Empire Oil & Gas Co.'s No. 2, Section 2-18-27, drilling below 900 feet; Flynn, Welch & Yates' No. 3 Dunn permit, NW SE NW Section 10 18-28, abandoned; Flynn, Welch & Yates' No. 10, NE SE Section 29-18-28, drilling below 2,259 feet; Flynn, Welch & Yates' No. 52, Section 28-18-28, drilling; Flynn, Welch & Yates' No. 53, Section 32-18-28, drilling in; Hamilton Petroleum Co.'s No. 1 Billings, Section 12 19-26, running packer; Henderson, Dexter & Blair's No. 1, NW Section 9-19-28, drilling below 2,100 feet; Levers, Carper's No. 4, SE Section 3-18-28, drilling; Merriweather's No. 1 Goodale permit, Section 19-18-29, shut down at 2,375 feet; Maljamar Oil & Gas

(Continued on Page 143)

Among the companies which are proud of their compressor stations—

Why do so many of them use Cooper gas engines?

The best explanation is the one given by the manager of a nationally known oil company. He once called the attention of a visitor to the manner in which his company installed such a simple thing as a pumping power. He said, "We use the best one we can get, then install it as though we expected it to stay there forever. Accurate operating and maintenance records have proved to us that our policy is steadily reducing our production costs."

His company has installed twenty-seven twin 170 horsepower Cooper compressors already this year.

THE C. & G. COOPER COMPANY

MT. VERNON, OHIO

1605 Kirby Bldg., Dallas 504 Kennedy Bldg., Tulsa
Bank of Italy Bldg., Los Angeles

Three California Fields Quite Active

Huntington Beach, Ventura Avenue and Seal Beach Expected to Increase Production Before End of Year

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Oct. 16.—Daily crude oil production in California started another upward climb a few weeks ago due to drilling, principally at Huntington Beach and Ventura Avenue, and new work in these areas may carry the state output up to around 620,000 bbls. daily during the next few months. It is interesting to note in this connection that the daily crude oil production in California has only dropped below the 600,000-bbl. mark five times during the entire year to date and the deviation from this level in each instance was only a matter of a few thousand barrels. The periods in question were March 1, April 19, September 13, September 27 and October 4, the daily production being checked at 599,500 bbls., 598,500 bbls., 599,500 bbls., 597,500 bbls. and 598,000 bbls., in the order named.

Considerable drilling is being done in the southwest extension of Huntington Beach and this new work, together with the development at Ventura Avenue and Seal Beach, is expected to boost the state output up to around 620,000 bbls. daily. Something like 50 new wells are expected to be completed at Huntington Beach before the close of the current year, many of which should be finished within the next 30 days. The Seal Beach Field should yield three or four new producers, while operators in the prolific Ventura Avenue Field should bring in 10 or 15 deep wells, which, if they come up to expectations, should average at least 1,500 bbls. daily. It is problematical just how this new production will be handled but it is believed that refiners and pipeline companies will find it necessary to resume storing crude and refined oils during the winter months.

To Build Gasoline Line

As a result of the drilling operations in the Ventura Avenue Field and consequent natural gas production, the Shell will begin work immediately on the construction of a 3-inch gasoline line from its absorption plants in that district to the company's Watson refinery near Los Angeles Harbor, a distance of approximately 110 miles. Application for a franchise has already been made and permission received to begin work in Ventura County at any time. The franchise calls for both a gasoline and crude oil line, the latter being designed as an 8-inch welded. The company does not contemplate laying the crude line until next year but will start work immediately on the gasoline trunk. The latter will cost around $250,000 but Shell engineers believe that this line will very nearly pay for itself during the first year, since evaporation losses will be minimized and maximum results attained by utilizing a pipeline instead of relying on tankers or tank cars for distribution.

Inadequate loading facilities and the possibility of being forced to delay tanker shipments from the unprotected Ventura Harbor during heavy weather were also contributing factors in the final decision to lay these lines to Los Angeles.

Crude From Colombia

While on this subject it might not be amiss to call attention to the arrival of the first cargo of Colombian oil on the Pacific Coast. The shipment in question consisted of approximately 70,000 bbls. of crude oil lifted by the British tanker Torontolite at Cartagena and delivered to the Imperial Oil Co.'s refinery at Ioco, British Colombia. The Torontolite will kill two birds with one stone as she will also carry a full load on her return trip. The tanker is expected to arrive at Los Angeles Harbor from Vancouver within the next day or so to load a cargo of fuel oil at the California Petroleum docks destined for Iquiqui, Chile.

The gasoline situation in California appears to have become stabilized for the present at least as far as prices are concerned, although there is considerable resentment on the part of jobbers and resellers because of a reduction in the differential from 4 cents to 3 cents per gallon. In connection with this it is interesting to note that members of the Independent Service Station Association of California have served notice upon local refining companies, through their secretary, C. J. Dreiling, that regardless of the gasoline price war which is now in progress they shall expect companies which are wholesaling gasoline to quote prices which will enable the independent retailer to make a margin of 4 cents a gallon profit on his turnover. The communication just referred to reads in part:

Want 4 Cents Margin

"It renders it practically impossible for us to maintain ourselves as legitimate business men in our service communities by maintaining the sale of your products at retail market prices which reduce our margins below the generally recognized standard of 4 cents a gallon on gasoline. Deploring the existing price war among the companies, we realize that we as members of this association are not responsible in the premises and therefore that we should not be called upon to help finance your conflict by the curtailment of our small margin. It always has been and will be the policy of this association to oppose price cutting among its members, to seek to elevate our fellows to the high level of legitimate business methods. In consideration of these facts we earnestly urge that in establishing the retail market prices of our products you retain to us a 4-cent margin. We hereby respectfully but positively notify you that in the event of any company failing to so protect us in accordance with legitimate business standards, we shall continue to retail on a basis that will make it possible for us to retain this 4-cent margin, and shall call upon the buying public to support us in this attitude by means of newspaper and other advertising."

Huntington Beach

The drilling program inaugurated in the southwest extension of the Huntington Beach Field several weeks ago is beginning to bear fruit and, as a result of the completion of several new deep zone wells, the daily field production has registered quite a perceptible increase. There are 64 active drilling projects in the extension at the present time, the greater part of which are between 3,500 feet and the completion depth which usually runs around 4,000 feet. Considering the depth of these various drilling wells, it is quite possible that the weekly completion list during the next several weeks will contain from 5 to 10 wells and it is needless to say that the field production will naturally reflect this new work. The question naturally arises as to whether or not the southwest extension is capable of sustaining town lot drilling and in this connection it might be well at this time to call attention to the fact that the wells finished during the past week or ten days have registered a considerable smaller initial daily production than those brought in heretofore, although of course this is to be expected. The drop in the initial production in this instance is due to the proximity of drilling wells which are unusually crowded, rigs in many cases being separated only by the width of a sump hole or a few lease storage tanks. Most of the rigs in the extension, by the way, are of steel construction, although there are some 15 or 20 wooden derricks.

Superior Gets Fine Wells

The Superior Oil Co. carried off all completion honors in the extension during the past week by bringing in five new wells with an aggregate initial daily production of 2,685 bbls. No. 71 Gillette was the company's largest contribution, as it came in flowing 850 bbls. from 3,925 feet, the oil testing 22.5 degrees and showing a cut of 3 per cent. No. 1 Chodnow started off flowing 560 bbls. of 23.6 gravity oil from 3,980 feet, while No. 1 Nixon registerd 400 bbls. from 3,970 feet. No. 1 fee and No. 1 Babbitt came in almost simultaneously, the former flowing 440 bbls. of clean 24.2 gravity oil from 3,860 feet, while the latter is credited with 435 bbls. of clean 23.9 gravity oil from 4,002 feet. The Superior, which company will be taken over by the Julian Petroleum in the near future, has several other drilling projects in the extension, although it will probably be another 10 days before additional completions will be listed.

The Standard wound up the week with two new wells, No. 3 Huntington, finished at 4,068 feet, and No. 5 Huntington, carried down to 4,034 feet. The former registered an initial production of 831 bbls. of clean 24.4 gravity oil, while the latter came in flowing 605 bbls. of 24.1 gravity oil which showed a cut of 3 per cent. The Standard has 10 other wells nearing completion, 2 or 3 of which should be tanking oil within the next few days.

George F. Getty increased his list of producers by finishing No. 5 Huntington at an even 4,000 feet, from which depth the well started off flowing 692 bbls. of fairly clean 24.3 gravity oil daily. Getty's next completion should be No. 6 Huntington and this well will be followed

(Continued on Page 130)

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, Well, Location—	S-T-R	Depth	Status
Marine, No. 1 Strong, Bellflower	24- 3-12	5,229	hd. sd. drilling
Feather, & Preston, No. 1 Blinn, Clearwater	16- 3-12	4,185	suspended
Union, No. 1 Howland, El Segundo	24- 2-15	5,326	fishing
Smith Pet. Co., No. 1 Johnson, Hawthorne	17- 3-14	4,860	gr. sd. drilling
Associated, No. 1 Cypress, Inglewood	34- 2-14	4,040	oil sand test
Dominguez Extension, No. 1 Compton, Dominguez	22- 3-13	1,300	sd. drilling
Riner, H. E., No. 3 McDermott, San Bernardino	32- 2- 8	610	hd. sd. drilling
Milham Explto., Well No. 2, Del Rey	34- 2-15	6,100	hd. sd. drilling
Cardiff Oil Co., No. 1 Oceanside, San Diego	24-13- 4	972	hd. sd. drilling
Petroleum Sec., No. 1 Seamon, San Fernando	14- 2-16	4,319	hd. sd. drilling
Standard, No. 1 University, San Fernando	15- 2-15	4,240	hd. sd. drilling
Standard, No. 1 Austin, Topango	11- 1-17	1,670	mechical trouble
Union, No. 1 Saugus, Saugus	10- 4-16	4,370	br. sh. drilling
Union, No. 2 Olinda, Orange Co.	10- 3- 9	5,926	suspended
Oceanside Oil Co., No. 1 Pacific, San Diego	23-11- 5	3,126	cleaning out
Halfhill Packing Co., No. 2 Jeffries, Burbank	2- 1-15	1,250	suspended
Sou. Calif. Drlg. Co., No. 1 Matteson, El Segundo	1- 3-15	260	hd. sd. drilling
Calif. Pet. Dev., No. 1 Spitz, Capistrano	2- 8- 8	2,260	sd. sh. drilling
Pettroleum Sec., No. 1 DeBaker, Bandini	18- 2-12	1,265	fishing
Van Nuys, No. 1 Community, Van Nuys	.....	3,860	hd. sd. drilling
Julian, No. 1 Mosier, Athens	12- 3-14	2,680	hd. sd. drilling
General Pet., No. 1 Lomita, Sunset Beach	19- 5-11	Mtl.	building rig
Johnson, Geo. W., No. 1 Wickham, Los Ang. Co.	32- 5-17	Mtl.	building rig

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Taylor, W. W., No. 1 Clovis, Fresno County	5-13-22	1,590	hd. sd. drilling
Associated, No. 2 Huron, Fresno County	20-19-17	1,570	hd. sd. drilling
Federal Explto., No. 1 Kinsella, Tulare Co.	15-22-24	3,400	br. sh. gas show
Bolsa Chica, Well No. 2, Kettleman	30-23-19	2,360	oil sand test
Marland, No. 1 Elliott, Kettleman	12-22-17	5,650	top Vaqueros
South Coalinga, Well No. 1, Kettleman	35-24-19	1,390	set 12½-inch
Shell, No. 1 Berlywood, Moorpark	32- 3-20	6,590	slight show
C. C. M. O., No. 1 Hobson, Ventura Co.	22- 3-24	5,855	bad fishing job
Milham Explto., No. 1 Sexton, Ventura Co.	19- 3-22	6,219	fishing
Milham Explto., No. 1 Buttonwillow, Kern	8-28-22	1,038	cemented
Standard, No. 1 Palmer, Santa Barbara	13- 9-23	3,329	hd. sd. drilling
Standard, No. 1 Carmarillo, Ventura Co.	29- 2-20	3,291	hd. sd. drilling
Pan American, No. 1 White, Monterey Co.	27-23-13	2,638	fishing
Pyramid, No. 1 Trescony, Monterey Co.	26-21- 9	3,109	fishing
Shell, No. 1 Murphy, Petaluma	29- 5- 6	2,920	hd. sd. drilling
Miley Explto., No. 2 Casitas, Ventura Co.	7- 3-25	623	fishing
Miley Explto., No. 1 Goleta, Santa Barbara	3- 4-29	180	sd. drilling
Rio Grande, No. 1 Camet, Ventura Co.	9- 3-23	1,870	gas show
Sentinel, No. 1 Tejon, Ventura Co.	5- 5-17	562	suspended
Woodward & Sheedy, No. 1 Famosa, Kern Co.	29-27-26	2,615	sd. sh. drilling
Henderson Pet., No. 2 Piru, Ventura Co.	33- 5-18	1,162	fishing
Ozena, No. 1 Allensworth, Tulare Co.	26-24-24	512	hd. sd. drilling
Union, No. 1 Gill, Famosa	8-28-27	505	hd. sd. drilling
Parkford, E. A., No. 1 Strathern, Ventura	.....	160	sd. drilling
Star Petroleum, Well No. 1 Ventura	13- 3-23	Rig	rigging up
Associated, No. 2 Kerman, Fresno Co.	36-13-16	Mtl.	building rig

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COST PORTS

Commodity—	Total This week	Daily Average	Total Last week	Daily Average	This year To date	Same time Last year
Crude oil	111,988	15,998	74,269	10,610	9,240,699	11,750,721
Fuel and gas oil	148,536	21,219	170,866	24,409	8,237,886	392,043
Gasoline	78,626	11,232	80,959	11,566	5,628,293	6,328,759
Tops	80,417	11,488	.....	.....	227,566	484,650
Coastwise—						
Crude oil	609,064	87,009	682,739	97,535	18,444,146	26,851,954
Fuel and gas oil	214,657	30,665	183,000	26,143	8,478,475	9,152,930
Gasoline	116,869	16,696	85,572	12,225	5,809,863	4,219,174
Kerosene	.....	.....	3,335	476	199,889	262,428
Tops	25,102	3,586	.....	.....	645,226	144,256
Exports—						
Crude oil	152,172	21,739	163,384	23,341	4,655,568	1,848,975
Fuel and gas oil	361,355	51,622	366,466	52,352	14,359,673	12,001,649
Gasoline	173,522	24,789	148,645	21,235	4,069,344	3,148,731
Tops	71,079	10,147	.....	.....	167,581	170,407
Kerosene	145,154	20,736	.....	.....	2,119,703	2,054,534

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS

Fuel and gas oil	77,948	11,135	152,218	21,745	1,559,784	218,414
Gasoline	.....	.....	.....	.....	758,222	1,036,369
Tops	.....	.....	.....	.....	229,775	794,918
Lubricants	.....	.....	.....	.....	335,228	317,558
Coastwise—						
Fuel and gas oil	179,652	25,665	63,409	9,058	3,648,860	3,172,282
Gasoline	58,869	8,410	.....	.....	3,519,308	1,956,449
Kerosene	15,429	2,204	.....	.....	298,705	145,776
Exports—						
Fuel and gas oil	128,992	18,427	78,906	11,272	2,737,063	2,077,016
Gasoline	.....	.....	154,024	22,003	1,379,490	459,361
Kerosene	.....	.....	4,093	585	1,541,864	882,434
Lubricants	.....	.....	.....	.....	8,759	243,429

Quality! Quality! Quality!

WELDED STEEL TUBULAR PRODUCTS

SIZES ⅛" TO 24" O.D.

DISTRIBUTORS:

Bovaird Supply Company	Tulsa, Okla.
Southwest Supply Company	Bartlesville, Okla.
Superior Tube Company	Tulsa, Okla.
Atlas Supply Company	Muskogee, Okla.
Hercules Supply Company	Dallas, Texas
Keystone Pipe & Supply Company	Butler, Pa.
McEwen Bros.	Wellsville, N. Y.
Thos. H. Pike Company	Los Angeles, Cal.

SPANG, CHALFANT & CO., INC.

GENERAL OFFICES, UNION BANK BUILDING

PITTSBURGH, PA.

Branch Offices:

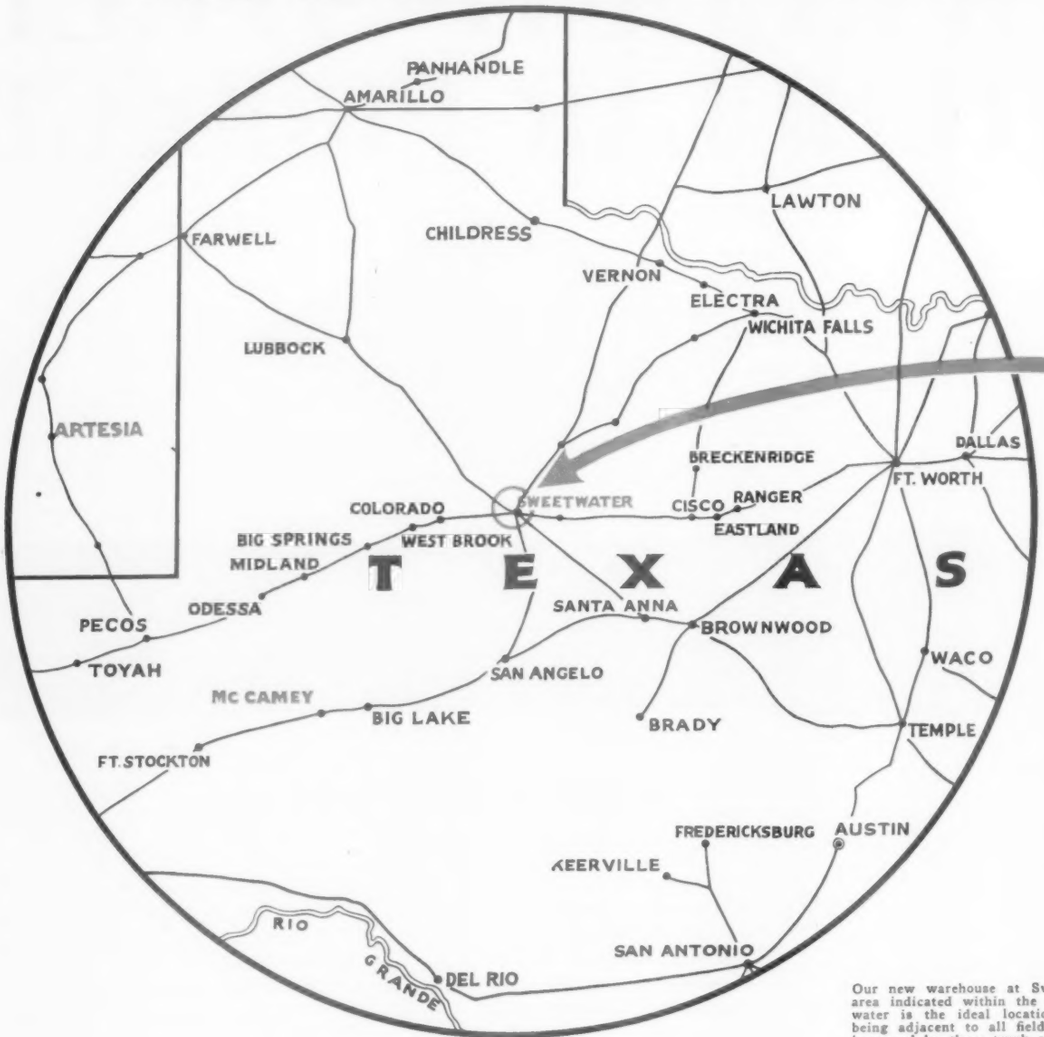
PITTSBURGH, PA. CHICAGO, ILL. NEW YORK, N. Y. ST. LOUIS, MO.

Mills:

ETNA, PA. SHARPSBURG, PA.

MORE —

NEW CENTRAL
ASSURES BETT



Our new warehouse at Sweetwater serves the area indicated within the circle above. Sweetwater is the ideal location for a warehouse being adjacent to all fields of importance and is served by three trunk railroad lines running in six different directions. Drillers and contractors whose operations are within this area will find the new Sweetwater distributing warehouse an important adjunct to Clark service. We also maintain field warehouses at McCamey, Texas, and Artesia, New Mexico.

CLARK BRO

SERVICE

WAREHOUSE
DISTRIBUTION

We carry a complete line of repair and replacement parts for Clark engines and compressors in our new warehouse at Sweetwater, photo of which is shown above. This new warehouse will serve exclusively the area indicated by the circle on the left-hand page. Our warehouse service, which has always been an important part of the smooth, continuous operation of Clark engines and compressors, is now made better than ever.

COMPANY

Strike in Daviess County, Indiana

Geiger Oil Co. Well Fills Two 100-Bbl. Tanks in First 24 Hours. East Ohio Gas Gets 130-Bbl. Well

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Oct. 16.—Very few completed wells are reported for the week from the entire Central West Field, due to the continued rains which are universal over all the producing areas of Ohio, Indiana, Illinois and Michigan. Illinois and Indiana fields have suffered the most, especially the Princeton Field of southwestern Indiana. The Wabash River at the close of the week stood 20.5 feet above normal at Terre Haute. Lower Knox County on the Indiana side is protected to some extent by levees from flood waters of the Wabash and White Rivers, but the rainfall which cannot enter the two rivers during high water often causes immense damage. On the Illinois side, the roads north and south from Vincennes are inundated, being inside of the levee. Central Ohio streams are out of bounds, causing almost a shutdown of operations in many oil and gas-producing counties.

Locally in the Lima Field of northwestern Ohio there is less cause for worry. The heavy rains of the past three weeks have provided little opportunity for drilling, and because of the mud work could not progress as was first anticipated when plans were made for a greater development program this fall. Should there be a period of fair weather, however, it is certain extensive development work will be done, as operators are much encouraged over the deeper drilling for oil in the Trenton Rock formation.

Drilling operations are well scattered in the Lima Field, with Wood, Hancock, Shelby and Darke Counties leading and a few scattering wells under way in Allen, Auglaize, Sandusky, Mercer, Van Wert, Seneca, Lucas, Ottawa, Hardin and Paulding Counties. In the Lima Field the larger part of the roads are macadamized, but the trouble comes in moving from the highways to the leases on account of the soft wet ground. Only two completions were recorded for the Lima Field during the week.

In Van Wert County the Chilcote Oil & Gas Co. of Lima brought in its No. 2 well on its lease, estimated at 15 bb'ls. No. 2 is reported to still be making 15 bbls. daily since its completion three or more weeks ago.

In Scott Township, Sandusky County, Stitt, Poole & James' No. 55 well, 600 feet from the north and west lines of the Stitt, Poole and others' farm, just out of Rollersville, in Section 4, showed a first 24 hours' production of 6 bb'ls. Sand was topped at 1,252 feet and drilled 78 feet in for a total depth of 1,330 feet.

Near New Bremen, in Mounton Township, Auglaize County, Geselchen & Young are drilling No. 6 on the W. E. Cook farm, Section 34. This firm has a large acreage in that area.

Indiana

Advices from the Daviess County Field of Indiana state that the Geiger Oil Co., composed of Hartman, Sargent and other well-known operators, has made a big oil strike in Veale Township, Section 28, several miles southwest of Washington, the county seat, on a block of 1,600 acres. This well is in the northeast corner of the Edith White 40 acres, in the northwest quarter of the section. It is also three-fourths of a mile southwest of the Ragsdale lease and one-half mile north of the Thorne Oil & Gas Co.'s fair producer, making a large acreage look enticing. The well during the first 24 hours filled two 100-bbl. tanks and possibly could have doubled that production had it been given a shot. The oil was found in the Oakland City sand, which is below the regular Veale sand. The top of the Oakland sand was found at 1,092 feet and drilled to a depth of 1,108 feet. The oil in this well is light and will bring about more active work. A new power pumping plant is to be installed at once, as the same company's power plant on the McDougal lease is too far away to be attached to the well.

Only two other completions were reported from the Indiana Field, both being in the Princeton Division, one a gas well and the other a very light producer. The Berne Field of Adams County has several wells due for completion, but were set back for some time to come.

The wildcat well of Bell Brothers, 250 feet from the south line and 600 from the west line of the Samuel McCullough farm, in the northwest quarter of Section 10, Barton Township, Gibson County, brought with it quite a surprise, as it is reported to show a volume of 2,500,000 feet of gas, with sand tapped at 1,030 feet, drilled 16 feet in the sand to a total depth of 1,046 feet. This is an important find, being about 2 miles west of the hamlet of Summerville, 3 miles almost directly north of Buckskin, 8 miles east and 5 miles south of Princeton, 4 miles south and 3 miles west of Oakland City. It may mean the opening of a new extensive gas area, which means that nearby oil may also be discovered.

The second completion was made by R. A. Hooton and others in No. 4 well, 250 feet from the north line and 660 from the west line of the J. T. Carrithers farm, in the northwest quarter of the northeast quarter of Section 30, Turman Township, Sullivan County. It is credited with a 1-bbl. production at 857 feet.

Illinois

With the Wabash River approximately 20 feet above normal, the Allendale Field of Wabash County, Illinois, is covered with water, that is the part of the field to the east of Allendale and near the banks of the stream. Regardless of conditions, a few holes were completed. The best completion was that of Joe S. Young, Jr., and others in No. 6 well, 1,000 feet from the north line and 200 from the east line of the Keyser farm, in the southwest quarter of Section 6, Wabash Township, which tapped the sand at 1,326 feet, and at 28 feet in the sand the well showed a first 24 hours' gauge of 150 bbls. natural at a total depth of 1,354 feet. B. F. Wirebaugh is also interested.

In the same field and area, the Adams Corner Oil Co.'s No. 9 in the northwest corner of the Mack Madden farm, in the southeast quarter of Section 7, is credited with an initial production of 35 bbls. Top of sand at 1,350 feet, drilled 18 feet in the sand, total depth 1,368 feet. Joe S. Young and others' No. 2 on the A. Gher 25 acres, in the southeast quarter of Section 6, 700 feet from the north line and 200 from the west line of the lease, failed to find a pay at a total depth of 1,476 feet and goes down for a duster, a thing that happens quite often a location away from a big producer in the Allendale Field. This same firm brought in a duster in a test 1,200 feet from the north line and 300 from the west line of the W. O. Johnson farm, in the northeast quarter of the northwest quarter of Section 6. Ellison and others are credited with a dry hole at No. 5 well, 800 feet from the north and west lines of the Collison heirs farm, in the northwest quarter of Section 13, and southeast of Allendale. Art Smith is drilling a well on the Edward Wright farm, Section 12, adjoining the Joe Keyser to the west and the Collison heirs farm to the south.

Two important tests under way to the northeast of production in the Allendale Field of Wabash Township, and northeast of the good wells on the Banks farm, one being on the Mrs. Laura Morgan 66 acres, a mile northeast of the Banks wells and not far removed from the Wabash River, the other being put down by Miller & Lengelson on the J. Walter Parkinson 355 acres, same section, which adjoins the Laura Morgan farm on the north as well as east, both in Section 22, the most northeasterly section of Wabash County, close to where it joins Lawrence County.

Mayhugh and others' No. 10 on the Kogan heirs farm, Section 2, Wabash Township, and within the defined gusher limits of the pool, is in the sand and showing for another of the good producers this farm has been turning in since the Allendale Field was opened.

In Friendsville Township, Wabash County, Henneberger and others' test in the southeast corner of the Bob Liddle 29 acres, in the southeast quarter of Section 27, struck top of sand at 1,767 feet and drilled 14 feet in the sand, resulting in a 5-bbl. pumper. This is wildcat territory, the well being close to 2 miles southwest of the Bass farm producers and a mile south and 1 mile west of the town of Friendsville. To the northeast of this venture, Alspaugh and others struck a duster at a test 600 feet from the south and west lines of the Abner Litherland 160 acres, in the northwest quarter of Section 26, same township, and possibly three locations to the northeast from the pumper on the Liddle farm. The Litherland well was drilled to a total depth of 1,793 feet.

Ohio Company Gets Good Well

In Dennison Township, Lawrence County, the Ohio Oil Co.'s No. 7 in the northwest corner of the Ellen Lutz farm, in the northwest quarter of Section 22, showed an initial natural production of 50 bbls. from the Buchanan sand at 1,379 feet. Same company drilled a dry hole in a second test in the northeast corner of the William Dennison farm, in the northwest quarter of the southwest quarter of Section 3, at a total depth of 1,004 feet. This well was drilled for the shallow pay sand.

Central Ohio

The bringing in of a good gas well is a report that comes from the extreme northeastern part of the Buckeye State, although its volume has not yet been confirmed. The report is that Dave Cubertson and others' test on the Mrs. Edward Splitstone farm, in Eldred Township, Ashtabula County, was brought in and good for 2,000,000 feet of gas, and if such is the case it is the largest yet found anywhere near Conneaut, the point from whence the information was given.

In Hanover Township, Ashland County, the Ohio Fuel Gas Co.'s test in the southwest corner of the Thomas Miller 100 acres, Section 16, encountered a strong sand approximately 600 feet above the Clinton sand which had a showing of oil, and the well was given a shot, resulting in an 8-bbl. producer. This is probably the stray sand that in the past was found productive in parts of Fairfield County to the southwest.

In Waterloo Township, Athens County, the Arkansas Fuel Oil Co. has what is reported as a 3-bbl. well in a test on the M. G. Wood 85 acres, Section 25.

THREE NEW WELLS IN SAGINAW FIELD; WATER GUSHER AND FIRE EXCITE CITY

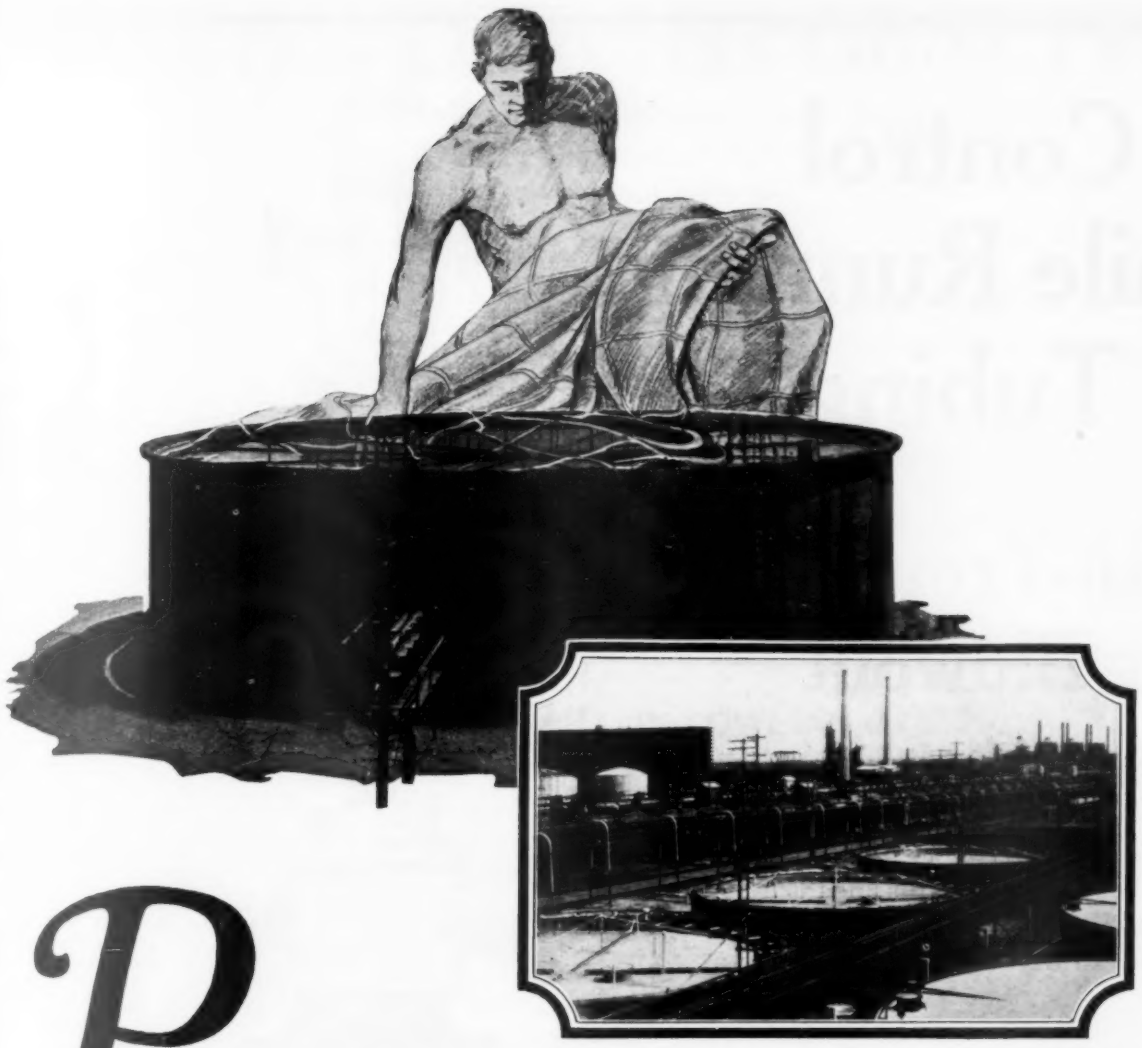
By Whit
Staff Correspondent, Michigan Fields

SAGINAW, Mich., Oct. 15.—A great excitement prevailed in the Saginaw Field when a report became current on the streets of the city that a flowing gusher had been struck to the north of the city in the new field, and hundreds of people rushed to the scene by auto and afoot, only to discover that the gusher was there, but not an oil gusher, a water gusher instead. This was the Saginaw Prospecting Co.'s No. 1 on the Hemmeter farm, a short distance out the Brockway Road, east of the city. While spudding at a depth of about 110 feet, the drilling crew was drenched with a flow of water that is reported to have flowed a solid stream of water and gravel 40 feet above the mast of the drilling rig. The flow is believed to have been caused by striking a pocket of gas in the gravel formation, although there was no oil showing.

Three new wells have been brought in as producers in the Saginaw Field since last report. The Saginaw Prospecting Co.'s No. 1 on the Periard-Bixley property, on Benjamin Street, south of Weiss Street, struck a nice pay in the Berea sand, and with two days' swabbing put 60 bbls. into tankage, and it is estimated at 30 bbls. The Sun Oil Co.'s No. 1 on the William Scherzer 10 acres, being the south 10 acres of the northeast quarter of the southwest quarter of Section 11, Saginaw Township, and north of the Kruska well, has been drilled in. Top of Berea struck at 1,825 feet and drilled about 15 feet in the sand. This well swabbed 25 bbls. the first day and 30 bbls. the second 24 hours, and appears to get better, anyway it is reported a 30-bbl. producer. In Carrollton Township, W. G. Bergherm and others' No. 1 on the John Winters farm, corner Shattuck and Michigan Roads, struck sand at 1,824 feet and filled up with 1,200 feet of fluid and is estimated at 20 bbls. This well is close to production, but a little to the northeast of producing wells, making only a slight extension in that direction.

There are four wells that should be brought in during the week. Among them are Matthew Heppler and others' No. 1 on the Mrs. C. Heppler property, on the Shattuck Road west of the Hermansau Road; Barker Oil & Gas Co.'s No. 1 on the Charles R. Phillips 60 acres, in the east half of the northwest quarter of Section 15, same township, a little over a mile almost direct west of the discovery well of the pool on the Deindorfer Woods; V. M. Vorhees and others' No. 1 on the Mrs. Jane Marshall 60 acres, in the southwest quarter of Section 16 and about a mile west and a little south of the test going down on the Phillips, or over 2 miles west and a little south of the discovery well of the pool; the Wanigas Oil Corp.'s No. 1 in the northeast corner of the Kundiger farm, in the northeast quarter of Section 32, Buena Vista Township, southeast of Saginaw City, and a mile northwest of the deep dry hole drilled by the Gardner Petroleum Co. on the Henry Schwannecke farm. This well is already in the Berea

(Continued on Page 118)



Some of the thirty-two Wiggins Roofs supplied the Marland Refining Company.

Put this protective blanket over your storage

Put Wiggins Roofs on your tanks to protect your storage against evaporation losses and destruction by fire. The steel deck and gastight seal act as a protective blanket that completely covers the oil surface. Evaporation is minimized because the roof rides directly on the oil surface, eliminating all vapor space except a negligible volume beneath the gastight seal which joins the roof deck and the tank shell.

Air accidently pumped into the tank with the oil collects beneath the gastight seal where it is held until it loses its entrained oil. The air, free of oil, is released to atmosphere through a self-closing vent. The oil returns to the tank.

Wiggins roofs are full protection against fire. The steel deck and gastight seal stop fire before it can reach the oil surface.

Wiggins Roofs are made for your present tanks. Get a quotation from us on them or let us quote you on new tanks and Wiggins Roofs complete.

Chicago Bridge & Iron Works

Chicago—2128 Old Colony Bldg.
New York—3147 Hudson Terminal Bldg.
Cleveland—2204 Union Trust Bldg.
Dallas—1641 Praetorian Bldg.
Atlanta—1054 Healey Bldg.
San Francisco—1054 Rialto Bldg.
Havana, Cuba—Apartado 2507

WIGGINS ROOF

OGJ19-21Gray

Control While Running Tubing

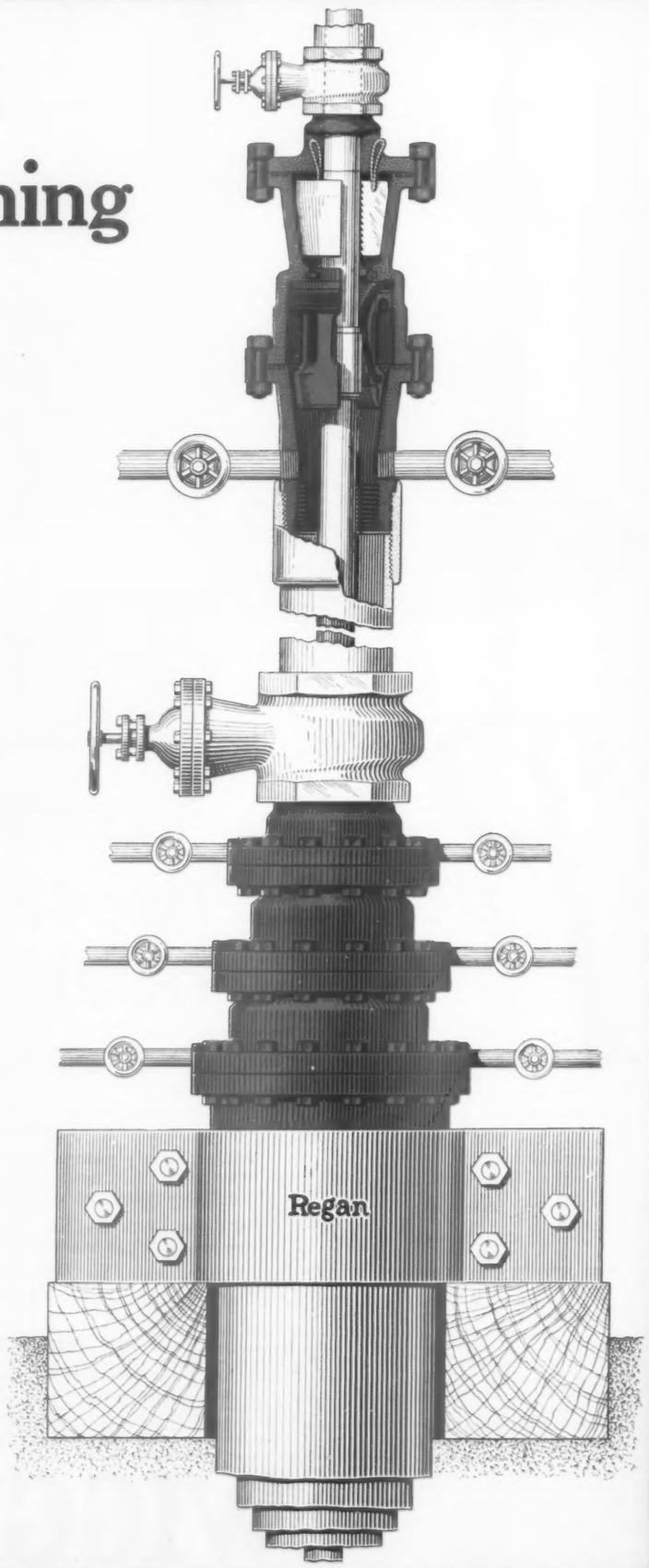
Regan-Trout Tubing Blowout Preventer

Tubing can be run thru this head while the well is producing gas, or oil, or both—maintaining absolute control.

A device you can depend upon to eliminate the hazard of a blowout. It also prevents oil from splashing over the derrick floor.

The Tubing Blowout Preventer is here shown hooked up with a Regan Control Head with bottom flange and landing clamps. The Control Head can also be used with a wide base Regan Landing Flange to set on a concrete base or timbers, as desired.

Send for our new illustrated folder, showing the methods of using these efficient devices.



Regan
Forge & Engineering Co.
San Pedro Quality California

Houston, Texas—1521 Post-Dispatch Bldg.
Tulsa, Okla.—227 Mayo Bldg.
New York City—75 West St.
Tampico, Mex.—J. W. Allen, Apdo. 1064

Southeast Ohio Has Good Producer

Southwestern Pennsylvania Also Reports Better Than Average Completions, but West Virginia Quiet

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., Oct. 18.—Development work in the eastern fields was more interesting than for a number of weeks. Both southwest Pennsylvania and southeastern Ohio completed good wells but West Virginia was not in the running. It had quite a number of completions and none better than light pumpers. At the present time operators have no territory in sight in the West Virginia fields to look forward to as capable of furnishing wells of a better than the present average.

Best Producers for Week

The Consumers Fuel Co.'s second test on the James S. Rutan farm in Morris Township, Green County, credited with a production of 833 bbls. the first 24 hours, ended the week with a production of a little more than 300 bbls. a day. In the same township, the Natural Gas Co. of West Virginia drilled in its No. 5 on the T. F. Rutan farm and it was flowing 20 bbls. an hour at the close of the week. So much for the southwest, a section that was thought not capable of furnishing anything better than light pumpers. At Reese Mills, Franklin Township, Elliott Moore & Co. got a Gordon sand gasser at No. 3 on the J. A. Reese farm good for 3,000,000 feet.

Southeastern Ohio completed some fair producers in the deep sand territory. In Lot 25, Hardy Township, Holmes County, the East Ohio Gas Co. completed and shot a test on the Bernice Allison farm. It produced 130 bbls. the ensuing 24 hours. In Section 12, Hanover Township, Licking County, the Edward H. Everett Co.'s second test on the Boyard F. McKee farm, drilled in last week, produced 125 bbls. the first 24 hours after completed and shot in the Clinton sand.

Good Berea Grit Wells

The Berea grit development in Newton Township, Licking County, furnished two better than average wells. In Lot 20, Newton Township, F. M. Rugg & Co. completed No. 11 on the Clinton S. McKinney farm and it produced 40 bbls. the first 24 hours after shot. In Lot 24, same township, the Ohio Fuel Supply Co.'s No. 12 on the Ellen E. Forry farm is a 25-bbl. producer in the same formation.

West Virginia

In Walker district, Wood County, Forrest Cline completed a test on the J. W. Goodwin farm good for 10 bbls. a day in the second Cow Run sand. In Grant district, Pleasants County, W. H. Wingrove completed in the same formation No. 5 on the F. A. Evans farm, not good for more than 1 bbl. a day.

In Union district, Tyler County, the American Oil Development Co.'s second test on the M. Cornell farm is a good gasser in the Maxon sand. In McElroy district, Baker & Dowler have a 5-bbl. pumper in the Dunkard sand at a test on the M. V. B. George farm.

Harrison County

In Sardis district, Harrison County, Hoffmire & Deegan's second test on the W. A. Rodgers farm is dry in all sands and abandoned. In Simpson district, the Clarksburg Light & Heat Co. had the same luck at a test on the G. A. and A. A. Lang farm. In Ten Mile district the Hampton Oil Co. has a fourth sand gasser at No. 3 on the J. W. Williams farm. In Elk district the Grasselli Chemical Co. has completed a test on the H. D. Stewart farm, a gasser in the Gantz sand.

Wetzel County

The Carnegie Natural Gas Co.'s test on the J. H. Furbee heirs' farm in Grant district, Wetzel County, is a gasser in the fourth sand. In Clay district, the same company's No. 5 on the Margaret Aberigg farm, drilled down to the Gordon sand, is a 3-bbl. pumper. In Center district, the same company's second test on the F. M. Wendell farm is a gasser in the Gordon sand.

Roane County

In Smithfield district, Roane County, the United Fuel Gas Co.'s test on the Presley Vineyard farm is a gasser in the Big Injun sand. In Walton district, the same company's test on the P. G. Kelly farm is a gasser in the same formation. The same company has completed a Big Injun gasser on the F. G. Jackson farm in Geary district. The United Fuel Gas Co. has a gasser in the same formation at a test on the D. C. Taylor heirs' farm.

Clay County

In Henry district, Clay County, the South Penn Oil Co. has completed in the Big Injun sand No. 39 on the O. D. Stockly farm, estimated to be good for 30 bbls. a day, after shot. The location is 550 feet north of No. 22 on the same farm. On Big Sandy Creek, Reedy district, Roane County, the Heck Oil Co.'s No. 4 on the D. H. Burroughs is through the Berea grit and good for 2 bbls. a day. In the same district there is a little new work starting.

Gilmer County

On Tanners Creek, Troy district, Gilmer County, the Ohio Fuel Oil Co. has completed in the Big Injun sand No. 3 on the W. C. Bush 48 acres, a natural producer good for 10 bbls. a day. On Dry Ridge, Grant district, in Ritchie County, Maxwell & Charter have completed and shot in the Big Injun sand a test on the A. B. White farm. It has so little oil and gas as not to make it a profitable producer. It will probably be abandoned.

On Hughes River, Grant district, Ritchie County, Mellon Brothers have drilled their second test on the Charles Kearns farm through the Big Injun sand and dry. To make the test complete they will drill through the Berea grit. On Walkers Creek, Clay district, Wood County, the Big Sandy Oil Co. has completed a second test on the S. L. Anderson farm in the Berea grit, a light gasser. On Dry Ridge, Grant district Ritchie County, Maxwell & Charter are moving a drilling machine to No. 1 on the B. M. Fouty lease of the A. B. White farm and will drill it to the lower sands.

Kanawha County

On Queen Shoals Run, Big Sandy district, Kanawha County, the United Fuel Gas Co. drilled its test on the Booker Mullin farm to a depth of 2,400 feet. Finding nothing in the lower sand it was filled up to the Keener sand and shot. It is a light gasser in this sand. On Rush Run, Smithfield district, Roane County, the same company has started to drill a test on the Asbury Lewis farm. In New Milton district, Doddridge County, Trainer & Travis have a rig completed on the W. M. Noble farm. In Union district, Clay County, the Chalmers Oil & Gas Co. has the rig completed for another test on the Samuel Samples farm.

In Henry district, Clay County, the South Penn Oil Co. has drilled a test on the A. B. Hicks farm through the Big Injun sand which will be good for 5 bbls. a day after shot. The location is 550 feet west of the same company's No. 10 on the Joseph Belcher farm. In the same district, the Virginian Gasoline & Oil Co. has completed in the same formation a second test on the Lockhart lease good for 10 bbls. a day. In Grant district, Ritchie County, the Oakdale Oil & Gas Co. has completed in the Big Injun

(Continued on Page 114)

SHALLOW WELL IN BOWLING GREEN ESTIMATED FLOWING 150 BARRELS

By Whit
Staff Correspondent, Kentucky-Tennessee

OWENSBORO, Ky., Oct. 18.—The leading feature of the week in the Kentucky Field was the bringing in of a shallow well by the Wood Oil Co., on the Davenport farm, in the Bowling Green Field of Warren County, estimated with a flow of more than 150 bbls. initial. The big showing was made in a second test on the Fulton Grider lease, in the Hopewell area of the Crocus Creek Field of Cumberland County, that was drilled down 141 feet below the Pencil Cave.

Weeks' Work Summarized

A summary of the week's work in the Kentucky Field shows 26 completions, 20 producers with an initial production of 336 bbls., 5 dry holes and 1 gas well. Compared with the previous week, there were 4 less completions, 3 less producers, 45 bbls. less production, same number of dry holes and 1 less gas well. The wells were distributed by counties and districts as follows:

County—	Comp.	Oil Wells	Prod.	Dry	Gas
Barren	9	9	126	0	0
Owensboro	8	3	28	5	0
Warren	3	3	156	0	0
Allen	2	2	6	0	0
Lawrence-Johnson, Johnson-Magoffin	3 1	3 0	20 0	0 0	0 1
Total	26	20	336	5	1
Last week	30	23	381	5	2
Difference	4	2	45	0	1

Kentucky Runs

Owing to the transfer of the Indian Pipe Line Corp.'s pipeline running from Allen to Warren Counties to Owensboro, thence across the southwestern portion of Indiana to Lawrenceville, Ill., to the Illinois Pipe Line Co., no report of the runs of this line is available for the month of September. As nearly as can be estimated, this line handled during September approximately 103,000 bbls., from the western Kentucky division.

The Paragon Development Co., for the same period, handled 17,192.39 bbls., from the Barren County fields, and 4,262.11 bbls., from the fields of Cumberland, Monroe and Clinton Counties, besides handling production through the same line from the Clay County, Tennessee fields.

The Stoll Oil Refining Co. handled for September, a total of 12,912.24 bbls., from the Barren County fields. This makes the total runs of the western division for September reach the high mark of 137,366.74 bbls.

In the eastern division, the weekly runs made during September were: Week ending September 4, 66,002.64 bbls.; week ending September 11, 63,934.79 bbls.; week ending September 18, 63,523.61 bbls.; week ending September 25, 71,062.42 bbls., or a total of 264,523.46 bbls. for the four weeks' period. The Stoll Oil Refining Co. also handled during the same period a total of 3,506.60 bbls. from the Lee County Field, which lies in the eastern division.

The runs of pipelines making reports

(Continued on Page 87)

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS AT DENVER MEETING

MEN KNOWN IN OILDOM

A. Guthrie Curtis

One of the best informed men on the gas industry of the Southwest is A. G. Curtis, former vice president and general manager of the Southwestern Gas & Electric Company, of Louisiana, and now residing in Chicago, Ill. He is a native of Marietta, Ohio, and a graduate of the Marietta College as a member of the class of 1885. He spent several years in Florida in the orange business and then moved to Chicago to accept a position with the Worthington Pumping Engine Company. Identified with the Dawes interests, utility operators, he went to Shreveport, La., in 1906, to assume management of the Shreveport Gas, Electric Light & Power Company, which distributed artificial gas and electricity in Shreveport and its environs.

When the Dawes interests organized the Caddo Gas & Oil Company to develop properties in Caddo Parish, Mr. Curtis was placed in charge of that company and was responsible for the production of oil as well as gas for the company's markets in Shreveport.

In 1912, the producing company and the Texarkana Gas & Electric Company were consolidated into the Southwestern Gas & Electric Company of Louisiana, and Mr. Curtis made vice president and general manager of the new organization. In 1909, he directed the affairs of the Bethany Oil & Gas Company, a Southwestern subsidiary which produced gas in east Texas and piped it to Shreveport.

When Mr. Curtis came to Shreveport, the gas company was serving 1,504 consumers with artificial gas. During his 20 years of service under that industrial flag, that number grew to 18,123. The Southwestern company and its subsidiary was noted for its progressiveness, especially in field work.

Mr. Curtis retired from the Southwestern company recently and moved back to his old home in Chicago. He was succeeded in Shreveport by Marshall T. Walker.

PERSONAL PARAGRAPHS

F. Park Geyer, president of the Marland Oil Company of Texas, was in Fort Worth one day last week.

* * *

Civil Engineer Albert Park, of the New York Oil Company, has returned to Casper, Wyo., from Detroit, Mich., where he had been called on account of the serious illness of Clarence Park, his brother.

* * *

C. R. Minor, vice president of the Gulf Refining Company, in charge of the Louisiana-Arkansas division, is recovering at his Shreveport home from an illness that kept him away from his office during the past week.

L. D. Messener, assistant treasurer of the Barnsdall Corporation, has been in Los Angeles, Calif., for two weeks.

* * *

Earl Powers has returned to Petrolia, Ont., from Persia, where he has been drilling for the Anglo-Persian Oil Company.

* * *

David Donoghue, of the Texas Pacific Coal & Oil Company of Fort Worth, Tex., was a Tulsa, Okla., visitor last week.

* * *

J. H. Senior, president of the West India Oil Company, has been elected president of the Standard Oil Company of Brazil.

* * *

B. F. Kelley, of the Titusville Iron Works, Titusville, Pa., was a Wyoming visitor the past week, calling on the trade in this region.

* * *

Jess Vernon, geologist of the Amerada Petroleum Corporation, has been transferred to Shawnee, Okla., after four years spent at Okmulgee.

* * *

E. M. Frid, sales manager of the U. S. Tool Company, Inc., of Long Beach, Calif., has completed a visit to the Mid-Continent Field.

* * *

H. G. Koehler, formerly with the Mellon Institute, Pittsburgh, Pa., has accepted a position with the Visking Corporation, Chicago, Ill.

* * *

Charles D. Clarke, of the Charles R. Long, Jr., Company of Louisville, Ky., was in Shreveport, La., recently in the interest of his company.

* * *

Charles E. Brown, vice president of the Warren Petroleum Company of Tulsa, Okla., has returned from an extensive trip through Europe.

* * *

J. J. Flannagan, superintendent for the Continental Oil Company in the Wyoming fields, is spending a well-earned vacation in California.

* * *

J. W. Bartlett, Jr., has left the Lone Star Gas Company and is now head of the gas measurement department of the Houston Gulf Gas Company.

* * *

P. J. Callahan, of the Moscow, Mo., station of the Prairie Pipe Line Company, was a visitor in Tulsa, Okla., last week looking up old Pennsylvania friends.

* * *

C. E. (Husky) Reynolds, and John Burns, both drilling contractors of Okmulgee, Okla., have started on a hunting trip in the Canadian Rockies.

* * *

F. H. Wickett, chairman of the board of directors of the Pan American Petroleum Corporation, was a recent business visitor in the Louisiana-Arkansas division.

* * *

Dan L. Newton, president of the Newton Process Manufacturing Company of Fullerton, Calif., with Mrs. Newton, have arrived home in Fullerton from South America.

* * *

Clarence M. Knudson has left the employ of the Mid-Continent Petroleum Corporation to accept a teaching position at the Colorado School of Mines, Golden, Colo.

* * *

Alex Robertson, president and general manager of Robertson & Company, pipeline contractors, has just returned from a pleasant vacation spent in northern California.

* * *

Richard Battle, formerly engineer with the Kingwood Pipe Line Company, is now in charge of land and lease work for the Devonian Oil Company, in southern Oklahoma.

* * *

S. Barna, general superintendent of the refining department of the Louisiana Oil Refining Corporation is expected to return to Shreveport, La., soon from a vacation in Europe.

* * *

W. E. Wood and Joe T. King, of the Kingwood Oil Company, Okmulgee, Okla., stopped off in Fort Worth, Tex., on their way to Abilene to look over the Jones County excitement.

* * *

R. C. Stewart, general manager of The Texas Company in the Louisiana-Arkansas division, spent a week in the southern part of Louisiana in the Gulf Coast fields, on a company mission.

Ed. George, former scout for the Amerada Petroleum Corporation, has resigned and is now a member of the Independent Oil & Gas Company's scouting department. He is located at Okmulgee, Okla.

* * *

James Massey, of Petrolia, Ont., and Mr. and Mrs. W. R. White of Alvinston, have left for Negritos, Peru, where Messrs. Massey and White are under three-year contracts to the International Petroleum Company.

* * *

M. O. Boring, zone agent in west Texas for the Gulf Production Company, has transferred his headquarters from San Angelo to Midland, where the company has leased eight rooms in the First National Bank Building.

* * *

Will H. Weaver is back in Casper, Wyo., after placing a steel rig for the Cosden interests near Faith, S. Dak., also a complete camp for the crew. This well is a wildcat and will be drilled by Contractor H. V. Meabon, also of Casper.

* * *

George L. Estabrook, president of the Crystal Oil Refining Company, Shreveport, La.; W. L. Lamont, secretary-treasurer; and H. A. McCarthy, attorney, all of Philadelphia, Pa., made a recent business trip to the company offices in Shreveport.

* * *

Joe Bostaph has arrived in Los Angeles, Calif., after having been engaged in foreign oil field work since 1914. Mr. Bostaph left again for Peru on October 15, with several drilling crews for the Lobitos Company, Ltd., an English concern.

* * *

A. M. McQueen, Mr. Neil and Miss Jean McQueen sailed from New York, on October 14 for Peru, where they will visit Mrs. S. F. Heard, youngest daughter of Mr. McQueen. Mrs. George Brake of Negritos, Peru, who has been visiting in Canada, accompanied them.

* * *

Malcolm B. Mainland and Douglas G. Smith, both of the Anglo-Persian Oil Company of London, England, are making an eight weeks' tour of the American oil fields, studying operating conditions. Mr. Mainland is located at Majid-Suleiman, Ahwaz, South Persia; while Mr. Smith receives his mail at Abadan, Persian Gulf.

* * *

A. H. (Ad) Gibson, one of the most widely known independent operators, and formerly in the partnership of Gibson & Zahnizer prior to the latter's death, was a Fort Worth, Tex., visitor last week in company with John Dickson. They were on their way to Abilene to inspect properties in Jones County, recently purchased.

* * *

H. E. Drake, head of the Kay County Gas Company, Marland Oil Company's subsidiary, in Texas, has transferred his headquarters to Ponca City, Okla., and 17 of the employes are moving from Fort Worth, Tex., to go with the company. H. J. Corcoran, assistant to Mr. Drake, will remain in Fort Worth as representative of the company.

* * *

S. Lee Gordon, well-known California operator, has just been elected vice president of the California Petroleum Corporation. Mr. Gordon will have personal charge of the land and leasing department of the corporation, succeeding General R. L. Peeler, who had held that post for several years previous to his resignation from the presidency of the company a month or so ago.

* * *

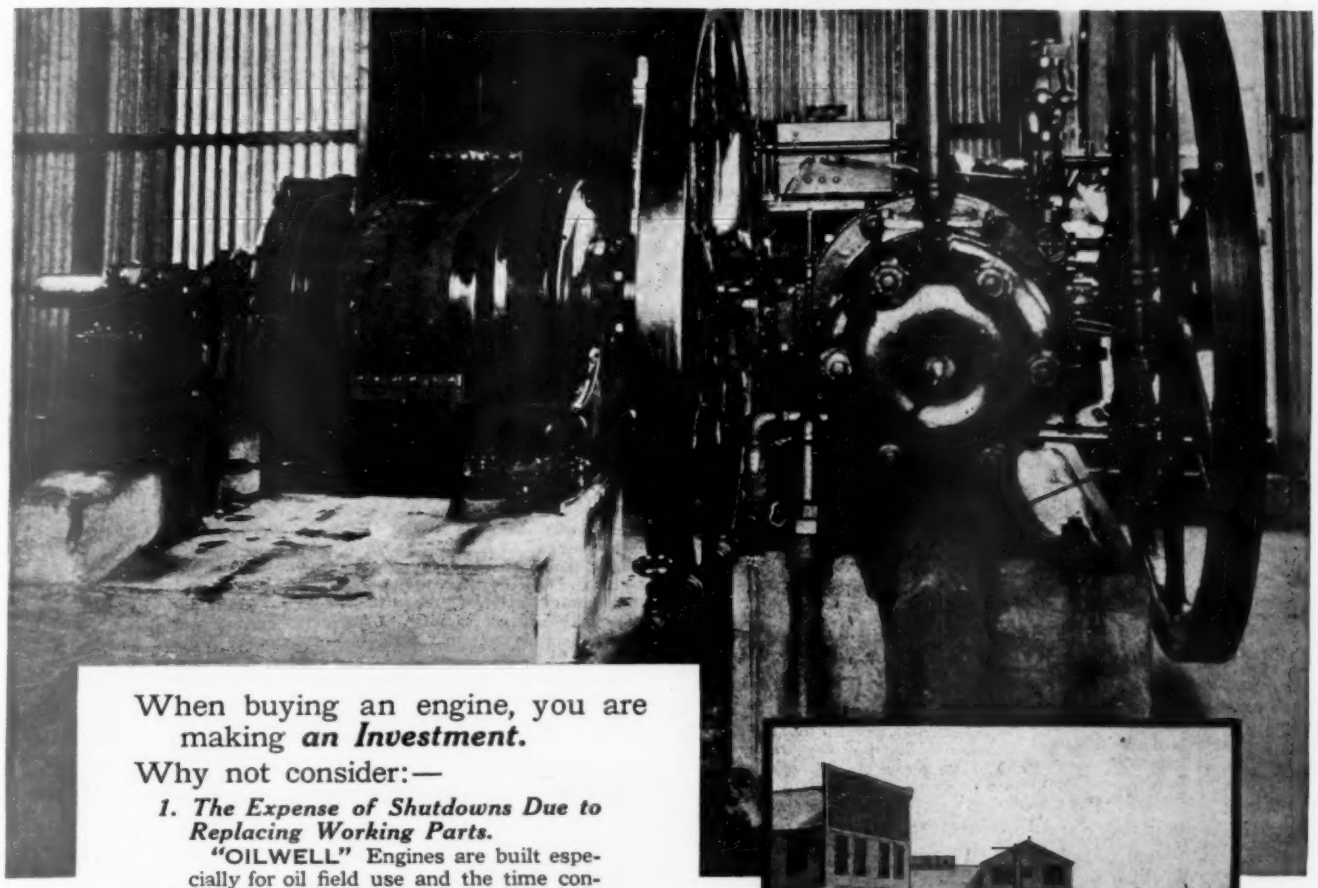
Allen T. Towl, New York, vice president and general manager of the Southwestern Group of Pipe Lines, E. E. Mecklin, assistant superintendent, Parkersburg, W. Va., V. S. Swisher, Oil City, Pa., secretary, and H. C. Dorworth, Oil City, Pa., solicitor, attended a directors' meeting of the Eureka Pipe Line Company, held at the offices of the company in Pittsburgh, Pa.

* * *

Walter C. Teagle, president of the Standard Oil Company of New Jersey, and a small party, made a brief visit in the Smackover Field. In Smackover the party was met by F. Ray McGrew, president of the Standard Pipe Line Company, and W. L. Stratton, assistant to C. K. Clarke, president of the Standard Oil Company of Louisiana. From Smackover, the officials made a short trip to parts of the Monroe Gas Field. Mr. Teagle and his party left for Baton Rouge and will then tour the West.

"OILWELL" Two Cycle Gas Engines

Furnished Complete ~ Ready To Run
No Extras To Buy



When buying an engine, you are making ***an Investment.***

Why not consider:—

1. ***The Expense of Shutdowns Due to Replacing Working Parts.***
   "OILWELL" Engines are built especially for oil field use and the time consumed in replacing parts is surprisingly small.
2. ***The Cost of Repairs.***
   The "OILWELL" Two-Cycle Gas Engine is unusually compact, has few working parts, and the crank case is completely enclosed. A mechanically operated lubricator furnishes correct lubrication, and a water pump insures proper cooling.
3. ***Operation.***
   Requires no special experience to operate, and can be easily started by one man.

Complete equipment includes enclosed crank case, governor, governor belt, water pump, spark plug, exhaust pipe, foundation bolts, and gasometer. Made in 30 and 40 H.P.

These Engines are Sold for an Investment.
Send for special Bulletin, or inquire at any of our 100 Branches.

Three of 16 "OILWELL" Two-Cycle Gas Engines Destined for a Large Operating Company's Lease in Oklahoma.

"OILWELL" ESTD 1862 TRADE MARK REGISTERED

OIL WELL SUPPLY CO.

NEW YORK—LOS ANGELES—PITTSBURGH, U.S.A.—SAN FRANCISCO—TAMPICO—LONDON

WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

EQUIPMENT AND SUPPLIES

TECHNICAL INFORMATION IN BEARING JOURNAL

The New Timken Engineering Journal, a loose-leaf book of 110 pages, contains technical information relative to the application of Timken bearings to automotive and industrial machinery. A number of pages are devoted to the explanation of the Timken bearing as manufactured at present. Exclusive features, such as the positive alignment of the rolls, one-piece precision cage and special alloy steel are explained.

Typical problems, with the solutions, involving the calculation of various loads and the selection of suitable bearings, are given. Tables showing bearing ratings, capacities and dimensions as well as speed capacity-curves are included. Methods of mounting Timken bearings, shaft and housing design, adjustment of Timken bearings, closures, cup and cone-fitting practices, assembly methods and lubrication are treated in separate chapters.

A full set of dimension sheets accurately drawn to scale, together with formulas and recommendations for the application of Timken bearings, developed through experience gained in successfully applying more than 150,000,000 bearings, comprise another section.

Automotive and industrial engineers will find this journal a valuable reference volume for their technical library. Copies may be had by writing the Timken Roller Bearing Co. at Canton, Ohio.

CONCRETE RESERVOIR RECENTLY CONSTRUCTED

The accompanying picture shows a 1,750,000-bbl. concrete oil reservoir recently constructed by the Robinson-Roberts Co. for the General Petroleum Co., Watson, Calif.

A uniform concrete, free from honeycombing, was essential on this work and to this end, and for the purpose of securing maximum workability, 3 per cent of Celite was used as an admixture. The mix was 1:2½:3½.

Exceptionally good results were secured on this job. The concrete, it is reported, was placed with a minimum of labor and set up with a finish of excellent texture and uniformity. Placing the concrete at the sides of the tank would normally have been a difficult operation and one which could not be satisfactorily performed without using a considerable excess of water. The use of Celite, the company announces, made it possible to use relatively dry consistency on this part of the work, which naturally reduced the amount of segregation and resulted in a stronger, more uniform concrete.

AXELSON APPOINTMENT

One of the recent changes in the personnel of the Axelson Machine Co. has been the appointment of T. W. Redd, who will serve as branch manager at the Coalinga store. Mr. Redd was formerly in the Los Angeles office and has been promoted to the branch management because of his excellent record.

REPORT SUCCESSFUL YEAR

Directors of the Waukesha Motor Co. have declared a $1,000,000 stock dividend, payable at once, together with a cash dividend. This, it is announced, was the result of the largest and most successful year's business that the company has ever had, the increase in business over that of 1920 being more than 250 per cent. The surplus this year also made possible the retiring of all the outstanding preferred stock before the common stock and cash dividends were paid.

PRESS FORGED STEEL BRAKE WHEEL TESTS

By A. E. Martois

The boom years in California following the discoveries of Signal Hill, Santa Fe Springs and Huntington Beach was a period which brought out the weakness of rotary equipment developed up to that time. No one can realize this fact more than those who were actively engaged in producing equipment to meet the demands of those frenzied drilling operations.

The most perplexing problem was the question of providing draw works spooling drums with brake wheels of sufficient strength to withstand the speedy and heavy drilling operations to which they were subjected. Day after day, drum assemblies were returned for repairs. These repairs called for replacing of cracked brake wheels, while other assemblies had to be reriveted.

The wheels were made of cast iron, and the expansion and contraction of the cast iron, caused by the heat generated by the brake bands, had a tendency to honeycomb or swell the structure of the metal. The expansion and contraction would also tend to loosen the rivets to such a degree that they would burst, and the pieces would fly over the derrick floor like shrapnel in a battlefield.

After a number of fatalities resulting from such failures, the California State Accident Commission issued an order that all brake wheels be guarded for protection to the derrick crew.

The manufacturers called upon every resource to remedy the condition. The wheels were increased in size, but this only added greater volume of metal to the fast revolving mass. Good engineering practice limited progress in this direction, owing to the low factor of safety which must be considered in the speeds to which cast iron flywheels can be subjected. Cast steel was then experimented with, but, owing to the complicated casting, shrinkage strains developed which could not be detected until they evidenced themselves by forming cracks when the wheels were put under load. The strain on the casting caused by this unequal shrinkage was further demonstrated by the fact that many of the castings would pop open while standing on the tool racks in the field.

The solution to the problem was finally brought forth by two of the most prominent engineers in the oil industry today. Shortly after organizing the Emsco Tool Co., E. W. Goeser, who is now vice president of the Emsco Derrick & Equipment Co., with the assistance of his chief engineer, W. D. Davidson, conceived the press forged steel brake wheel, on which patent papers were issued August 26, 1924.

This brake wheel is made of a .30- .40 carbon steel press forging, hardened and machined to a uniform thickness of ¾ inch on the braking surface. No ribs add to the volume of the metal as is found in cast iron and cast steel wheels. This construction allows for a uniform expansion and contraction, whereas in castings the uniformity and distribution of the metal cannot be controlled to close limits. The construction of the complete assembly is such that the web of the brake wheel and outer and inner flanges being riveted in such manner that all rivets are placed in double shear, and the flanges are securely keyed to the shaft. This construction eliminates spreading, and, on the hundreds of assemblies now in use on Emsco draw works as well as on many other makes of draw works, not one rim failure or loose rivet has been reported.

PIPELINE PROTECTION DISCUSSED IN BOOKLET

Since the introduction of steel pipe for oil lines and gas mains, engineers have sought the most efficient and economical means of protecting these lines from corrosion. While it was possible to obtain an effective protective coating, it was usually found that the application of such coatings proved impractical or uneconomical and the problem has been to combine efficiency in protection with ease and economy in application.

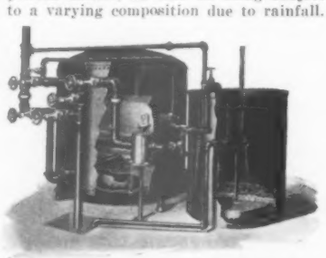
In view of this situation, engineers should be interested in "The Protection of Pipe Lines," a book just published by the Wailes Dove-Hermiston Corp. of 17 Battery Place, New York. This book covers more than 40 years' experience in the anticorrosive protection of metal surfaces with particular reference to the protection of water mains and other pipe of large diameter as well as to the protection of small diameter pipe such as oil lines and gas mains.

The company which publishes this book has applied its products known as "Bitumastic Enamel" and "Hermastic Pipe Coating" to steel water supply systems which have been laid in this country in the last ten years. These applications are illustrated and described and the book then proceeds to take up the question of protecting oil lines and gas mains.

Officials of the Wailes Dove-Hermiston Corp. state they will be glad to send complimentary copies of this 56-page book to all engineers who are interested.

TWO ORDERS PLACED FOR WATER TREATING PLANTS

Roxana Petroleum Corp. has purchased water-treating equipment for its Hammond, Ind., plant. This equipment consists of two Zeolite water softeners, 8-foot diameter by 14 feet long, and two filters, 8-foot diameter by 14 feet long. This equipment will be used for treating the boiler feed water, which is taken from the Calumet River. This water carries considerable industrial waste and suspended matter, as well as being subject to a varying composition due to rainfall.



The Carter Oil Co., Tulsa, Okla., has also purchased water-treating equipment for its Seminole, Okla., plant. This equipment consists of three Zeolite softeners, 8 feet in diameter by 14 feet long, three filters, 8 feet in diameter by 16 feet long, and lime pretreatment equipment. This combination lime-soda, Zeolite treatment will soften and clarify river water for use in boilers, cooling coils, condenser boxes, etc.

Both of these water-treating plants will be built and installed by Graver Corp., East Chicago, Ind.

NEW ABSORPTION PLANT READILY TRANSPORTED

The Southwestern Engineering Corp., in close touch with the producers of natural gasoline and anticipating the needs of this industry, have recently designed and placed on the market a large factory built and assembled absorption plant designated as the Southwestern type 75 unit. The same principles of design have been followed in this new unit as in the original Southwestern portable absorption plant.

Among certain companies there was some doubt of the practicability of the small portable unit when it was first developed. That this prejudice has been overcome and the unique position of the portable fully established is shown by the fact that there are 75 of these small portable units in operation in various parts of the country. The Southwestern factory is now building No. 93.

Manufacturers of natural gasoline engaged in a relatively new industry, are naturally progressive. The efficient operation, results and economy of the portable unit having been fully demonstrated, it was a logical step that these same manufacturers should demand a larger self-contained unit that could be readily transported and set up in a few days. Natural gas engineers believed this unit should be able to produce better than 6,000 gallons normally. To satisfy this demand, Southwestern engineers (26 specialists in various branches of engineering) have designed the new type 75 absorption plant, and the company is now manufacturing the unit. The normal rating of the plant is 7,500 gallons of gasoline per day. The plant can be quickly installed, and at the same time the company reports the highest efficiency has been maintained.

The plant consists of three units mounted on a steel frame. On No. 1 section are three oil pumps and two water pumps with piping, valves, fittings and suction and discharge headers. On section No. 2 is the heat exchanger, preheater and evaporator. Section No. 3 has the oil cooler, condenser, fractionator and control section. These three sections, when assembled together with the absorption tower and cooling tower, comprise the complete 7,500-gallon unit.

The entire unit is built complete at the factory, and after assembling and thoroughly testing, the fractionator and evaporator are demounted from the steel base for shipment. It is possible to so dismantle the plant that the weight of the heaviest piece will not exceed 7,000 pounds, and yet on arrival of the plant at its destination it can be reassembled complete in three days.

The Southwestern Engineering Corp. has 10 of these type 75 units on order and will carry these units in stock.

AUTOMOTIVE AIR FILTER

Important developments recently announced by the Staynew Filter Corp. of Rochester, N. Y., a manufacturer of automotive air filters, have focused attention on new refinements in this automotive protective device. The Protectomotor air filter claims the distinction that it actually filters the air which enters the carburetor through an especially prepared filter medium.

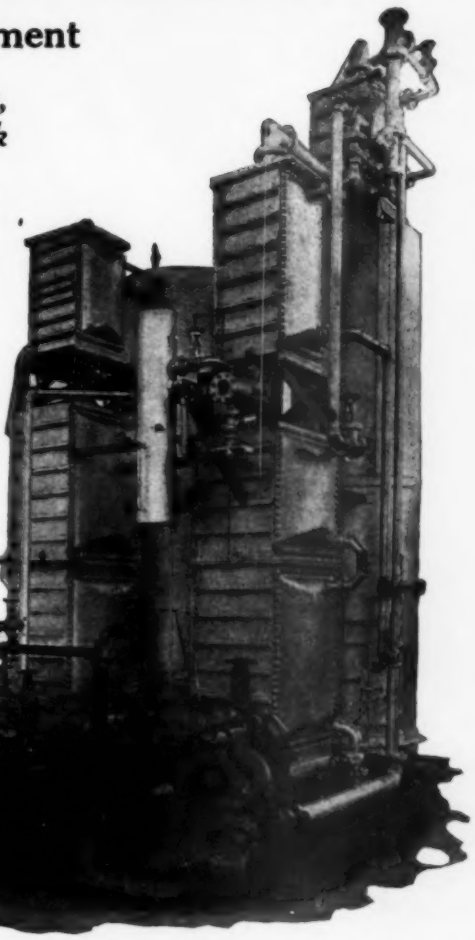
EXHIBIT WON PRIZE

The D. & B. Pump & Supply Co., Los Angeles, was awarded first premium at the Bakersfield fair, September 14-18, for the best all-round exhibit and for its oil well pumping equipment.

"SOUTHWESTERN" LEADS AGAIN!

An Unparalleled Achievement

A complete 7,500 gallon unit, in operation in one week



The unit shown here is one of the new factory built gasoline absorption plants of 7,500 gallons capacity, designed and built complete by "Southwestern."

"SOUTHWESTERN"

First, with the well known portable plant—75 in operation.

Now again with the new factory built larger unit.

Efficiency and dependability are built in features of this "Southwestern" factory built plant, which consists of the very latest apparatus of the most advanced type. Every unit completely accessible. Compactly assembled on steel frame in three sections. Numerous advance orders show a real demand for this plant. Once seen fully appreciated. Complete information on request.

SOUTHWESTERN ENGINEERING CORPORATION
1221 Hollingsworth Bldg.,
Los Angeles, Calif.

837 Mayo Building,
TULSA, OKLA.

FACTORY
Culver City, Calif.

BRANCH FACTORY
Tulsa, Okla.

"SOUTHWESTERN BUILT"
A MARK OF SATISFACTION

"Save the surface and you save all"—

Arco *Protective Products* conquer rust!

RUST! That's a dread word to oil and gas men. Yet this spectre can be checked—positively—permanently.

For years the Arco Company has paid particular attention to the formulation of protective products that will conquer rust. That this effort has been eminently successful is definitely proven by the widespread use of Arco protective products on pipe lines, tanks and other equipment exposed to wind and weather.

THE ARCO COMPANY · CLEVELAND, OHIO

Paints · Varnishes · Enamels · Lacquers (53)

ARCO

PAINTS VARNISHES ENAMELS LACQUERS

Natural Gas Developments

NEW GAS PIPELINE, DILWORTH TO WICHITA

An important addition to the Cities Service pipelines, in the Mid-Continent Field is the Empire's recently completed Dilworth, Okla.,-Wichita, Kans., trunk gas line consisting of 34.5 miles of 10 inch welded, 2.5 miles of 12 inch Dresser coupled, and 19 miles of 16 inch Dresser coupled pipe.

The contract for this work was awarded to J. J. O'Connor & Son Construction Co., of Kansas City, Mo., who moved in equipment and were ready to start when the first of the 16 inch pipe arrived at Haysville about May 1, 1925. From that date on, everybody pushed, and, in spite of the obstacles encountered, Dilworth gas was delivered at Wichita about July 25.

In order to lay 56 miles of line in less than three months, the contractor ran two construction camps. The crew at the north camp, located near Haysville, laid all of the Dresser coupled line, while the men in the south camp laid the welded portion.

While the contractor's men were at work on the line, the Empire's superintendent of construction, Ross M. Stuntz, and his corps of assistants carefully inspected every part of the construction work. The low leakage rate shown by the pressure test, and the small amount of trouble occurring during the line's first year of operation, says the Doherty News, are proof of efficient laying and inspection. But in spite of the apparently perfect conditions this line was not going to lay itself.

The first joker encountered was the sand. It was easy to move—in fact too easy, for it moved of its own accord. Digging a ditch in some places was like digging a ditch in a lake. Instead of a ditch 2 feet wide by 3 feet deep, we dug a valley 6 to 8 feet wide by 3 feet deep, and then prayed that a wind storm would not fill it up before we could get the pipe in it.

Welded Section

The southern 34.5 miles is composed of new 10 inch bevel end pipe. This pipe was made especially for welding and was shipped from the mills directly to the job. It was strung on the right of way by Cox & Vandever of Yates Center, Kans. The actual welding work was performed under the direction of Jack Tipeon for the contractor and Miles J. Cook for the company. The lining of the pipe for welding was performed by a crew of 10 to 12 laborers, a foreman, a welder and welder's helper. The joints were accurately lined, clamped into place and tack welded. For this welding operation, a cart carrying a cylinder of acetylene and a cylinder of oxygen was used. This crew lined up and tacked the pipe into five joint sections, which were welded by the head welding crew.

The head welding crew was composed of 12 welders with their helpers, teamsters, generator tenders and foreman, working in three groups of four welders each. Each group was equipped with one 100 pound charge Imperial acetylene generator, mounted on a farm wagon along with necessary oxygen bottles, filler rod, regulators, etc. For each group of welders, there was one helper and one teamster. The helper rolled the pipe, attended to the generator, regulated pressures and assisted the welders in any way necessary. This crew of 12 welders made from 116 to 148 welds daily.

Five welders, four working from a 100 pound Imperial generator, and one tack welder with Prest-O Lite outfit, composed the middle welding crew. These welders with 1 helper, 10 laborers and a foreman lined and welded the five joint sections into sections as long as the contour

(Continued on Page 111)

REMOVING WATER FROM GAS WELLS FOR PROTECTION OF THE FIELD

By C. H. Lutz*
Division Superintendent, Dominion Natural Gas Co., Ltd., Dunnville, Ontario

1. What are the most adequate means of removing water from gas wells for the general protection of the field?
(a) In high pressure wells.
(b) In low pressure wells.
(c) Under heavy water conditions.
(d) Under light water conditions.

It would be difficult, indeed, to answer each one of these questions specifically and in such a way as would apply to all cases, as there are so many conditions involved and so many different combinations, that most every well is a problem in itself. We might have a heavy or a light water condition in high pressure wells as well as in low pressure wells, but the tendency would be towards a light water condition.

Assuming that it is possible to shut the well in casing, with a light water condition prevailing, and with sufficient pocket so that the well would not have to be bailed more than three times a year, and the well is readily accessible without damage, the most economical and best way to operate wells of this type would be as bailing wells, providing good records are kept as to the frequency and dates of bailing, and the amount of water found in the well in each case. If, however, there were only a comparatively few of these wells in a field, and at a great distance from central office or each other, such as would mean long hauls for bailing outfit, etc., in all probability in isolated cases of this kind, these wells could be operated to better advantage as blowing wells.

Blowing Wells

In cases where wells are tubed with 2-inch tubing and would come under the light water class, I do not think that bailing would be considered practical, that is, generally speaking, and in these cases the most adequate method would be that of blowing the water through siphon pipe by means of well or line pressure. It is in cases of this kind where the personal element plays such an important part, as it is quite possible for well blowers, by the use of poor judgment in blowing their wells, such as blowing too often, too long and not often enough, to make this method both inadequate and expensive.

In low or high pressure wells, under heavy water conditions, the most adequate means of removing the water is by pump and power outfits, with power supplied either by gas engine or horse power. There might be a few cases where the pump head could be used; for example, where exhausting into low pressure system, but their use should be condemned generally. Repeating, therefore, in cases where possible to shut wells in casing or tubing 3 inches in diameter or larger, under light water conditions, whether high or low pressure, with fair accessibility and wells are not isolated, and with due consideration given the ease of operation, the smaller investment involved, and the waste of gas, I believe the most adequate method of removing water is by bailing. In cases where wells are tubed with 2 inch tubing and would come under the light water class, either high or low pressure, I do not believe bailing would be considered practical, because of the frequency of bailing and the time involved in bailing, due to having to use small bailer, and the waste of gas necessitated by having well opened so often and long, and in these cases, I believe, as mentioned before, the most adequate means of re-

(Continued on Page 108)

*Before the Natural Gas and Petroleum Association of Canada at Niagara Falls, Ontario.

DALLAS WILL OPPOSE INCREASED GAS RATE

DALLAS, Tex., Oct. 16.—Dallas will meet a requested raise in the schedule of rates of the Dallas Gas Co. in a hearing before the State Railroad Commission at Austin November 16. A later hearing may be asked to collect additional data.

Original petition of the gas company for a raise in rates, the second within a year, was filed with the supervisor of public utilities several months ago, but no final action has been taken by the City Commission, nor, so far as is known, has the supervisor made a recommendation in the premises. Acting Mayor John C. Harris, following the taking of the case before the railroad commission by the gas company, declared the city would fight the utility to the higher courts rather than submit to the raise in rates.

It is believed that in the hearing the whole issue of gas rates in Texas will be aired, particularly the rates charged by the Lone Star Gas Co., which supplies gas from various Texas and Oklahoma fields to the Dallas Gas Co. and other distributing corporations.

NEW WILMINGTON CO. SALE TO GROVE CITY

OIL CITY, Pa., Oct. 16.—The Public Service Commission of Pennsylvania will be asked at once to approve the sale of the New Wilmington Gas Co., organized in 1910 with a capital of $40,000, to the Union Heat & Light Co. of Grove City, owned by Crawford and Gregery, well-known gas men of Emlenton. H. C. Johnson, the selling company secretary, announces the sale. The transfer is to be retroactive to October 1 if the commission approves.

The company has franchises for New Wilmington and intervening towns between their leases in Springfield Township and that town. Ratification of the sale is stated to have been made by the stockholders.

The New Wilmington company has been selling its surplus gas to the buying company for some time. The company was organized following the securing of a number of gas wells in the territory drilled in by a company headed by Nelson Hovis, well-known operator. The terms of the sale remain a private matter with the two concerns, but is reported to be in the neighborhood of $100,000.

NATURAL GAS LINE TO SULPHUR PLANTS

HOUSTON, Tex., Oct. 16.—The Houston Pipe Line Co., a subsidiary of the Houston Oil Co., has completed 54 miles of 16-inch line to connect the plants of the Freeport Sulphur Co. at Hoskins Mound and Bryan Mound in Brazoria County with its main system. Approximately 10,000,000 feet of gas per day is now being delivered to the sulphur company's sulphur deposit at Hoskins Mound, where about 2,500 tons per day is being "mined." The natural gas replaces Mexican topped crude oil.

The sulphur is melted with superheated steam and then pumped to the surface. Vast batteries are required to make the steam, and these in turn require a large amount of fuel. The contract calls for 30,000,000 feet of gas per day, which will be supplied when a section of a loop is completed. This amount of gas is equal to 6,000 bbls. of crude in heat units, which is about the amount of fuel oil the sulphur company has been using.

The Houston Pipe Line Co. is also furnishing the Texas-Gulf Sulphur Co. with an average of 16,000,000 feet per day at its "mine" at Gulf, Matagorda County.

The pipeline company is completing an 80-mile extension from its fields at Lucas, Live Oak County, southwest to the Cole-Bruni section in Duval County. It will be completed and in operation in about 15 days.

Frank W. Kirk, well known among natural gas company officials in the east and southwest parts of the country, is the general superintendent of the Houston Pipe Line Co., with Houston headquarters.

NATURAL GAS LINES SHOULD BE BURIED

Pipelines through which natural gas is flowing should be buried to minimize fluctuations in the temperature of the gas, as these fluctuations have several harmful effects, states the Bureau of Mines, which has made a study of the subject in co-operation with the State of Oklahoma.

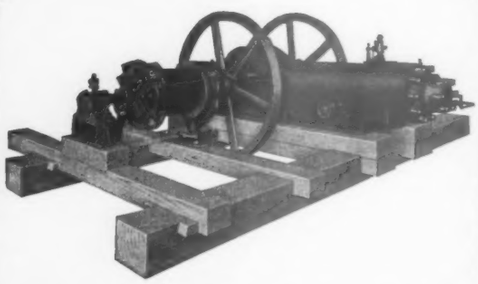
One very important effect of fluctuation in temperature has been observed, when the leakage of gas from transmission lines constructed on top of the ground was compared with that from lines covered with earth. The rapid temperature fluctuations, when the lines are exposed to the rays of the sun, cause expansion and contraction in the joints and increase the leakage of gas. A striking example was found in a leakage survey recently completed by the Bureau of Mines. A transmission system in a hilly district was tested for leakage. In the roughest part of the district where the lines were uncovered on account of high initial cost of ditching, the annual leakage averaged about 2,000,000 feet per mile of 3-inch line at 100 pounds per square inch gauge pressure. On the same transmission system, where the topography was more favorable for ditching, and the lines were buried, the annual leakage varied from only 100,000 to 200,000 feet.

Another effect of temperature fluctuation is to decrease the accuracy of measurements of gas volume. In order to meter properly the quantity of gas flowing past any point in a transmission system, it is necessary to know the temperature of the gas. If the temperature remains fairly constant, the gas flow can be measured with a close degree of accuracy, but if it fluctuates rapidly, close measurement is impossible.

The accuracy of volumetric measurement is greatest when the temperature of the gas is nearest to the standard temperature of 60 degrees Fahrenheit. This is due to the necessity of applying a correction to the apparent volume of gas as measured at other temperatures, in order to determine the true volume at 60 degrees. There is usually more or less error introduced in making such corrections, and this error is greater the larger the correction.

In order to estimate the magnitude of these temperature fluctuations, records were kept by the Bureau of Mines for a period of one year of the temperature of natural gas flowing in buried and uncovered pipelines. It is hoped that these records will serve as a basis for explaining differences in leakage rates from buried and uncovered transmission lines, "breathing losses" in gasoline pipelines, and apparent errors in natural gas measurements.

STEAM VS. DRILLING



Franklin Valveless Oil Drilling Engine

For Cable Tool Drilling

A single cylinder oil engine which will give minimum operating cost, better performance under all conditions, and reduce drilling time.

Gives a perfect drilling motion and eliminates "fighting" the engine at any point from top hole to oil. Easy to start in all weathers. Visible lubrication.

Prices

Complete with Self-Oiling Reversible Drilling Clutch, Circulating Pump and Fuel Tank.

Sizes for Mid-Continent and Western Service, $3,350 and $3,700—F. O. B. Factory

Sizes for Eastern Service, $2,600 and $3,350—F. O. B. Factory

What the Steam Engine User Has to Contend With~

1—TONNAGE—Weight of the Steam Engine and its boiler makes its transportation costs very high, from the standpoint of handling and cartage. Moving a steam engine from one well to another is a serious and expensive problem.

2—WATER—Not only the amount and cost of hauling the great quantity of water necessary to operate the steam engine, but the effect of the notoriously poor water available in the oil fields is a big problem the driller must contend with. It is not unusual for boiler tubes to give out after very few days of service due to the deteriorating effect of the water available.

3—FUEL—Wood and coal are hard to get, difficult and expensive to transport. When gas is used, laying of lines alone in many instances is more than the cost to operate a Franklin Valveless Oil Drilling Engine.

4—MAN POWER—A steam engine requires almost constant attention so that its selection adds not only to the costs of transportation, water and fuel, but to the pay roll.

THE WONDER ENGINE FOR DRILLING

FRANKLIN VALVE

THEY BEAT STEAM

OIL AND GAS ENGINES

What the FRANKLIN VALVELESS Owner has in His Favor

1—LIGHT WEIGHT—A complete Franklin engine can be carried to the job on one truck. Moving from well to well is a simple problem.

2—WATER—Records show that 100 barrels of water are sufficient to drill a thousand feet of hole.

3—FUEL—Whether using the Franklin Valveless Oil Drilling Engine or the Franklin Valveless Gas Drilling Engine, you will find the cost of operation astoundingly less than steam.

4—OPERATION—The Franklin Valveless Engine will do all that a steam engine will and at a fraction of the cost to operate. Unlike many oil or gas engines the Franklin is designed for flexibility and smoothness of operation. It has the power and uses it. No change of fuel conditions in shifting location will bother the Franklin owner because a Franklin Type AO Oil Engine can be converted from oil to gas in two hours time.

Franklin Valveless Engine Co.
FRANKLIN, PA.

Distributed by

Atlas Supply Company
Muskogee, Okla., and Branches

New Martinsville Supply Co.,
New Martinsville, W. Va.

Bradford Sales Co.,
Bradford, Penna.

Washington Engine & Pump Co.,
Washington, Pa.

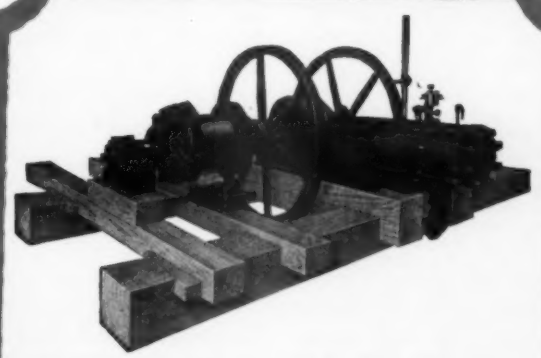
International Supply Co.,
Tulsa, Okla., and Branches

Wooster Tool & Supply Co.,
Wooster, Ohio

Atha Supply Co.,
Zanesville, Ohio

McEwen Brothers,
Bolivar, N. Y.

American Tank Co. of Colorado
Casper, Wyoming



Franklin Valveless Gas Drilling Engine

For Cable Tool Drilling

A drilling engine operated on natural gas which eliminates excessive fuel bills, water supply, moving expense and lubrication and affording a perfect drilling unit with no adjustments necessary during the entire drilling operation. One man can easily start this Franklin.

Prices

Complete with Self-Oiling Reversible Drilling Clutch and Circulating Pump.

Sizes for Mid-Continent and Western Service
$1,725 and $2,150—F. O. B. Factory

Sizes for Eastern Service
$1,450 and $1,725—F. O. B. Factory

Franklin Engines Will Do Everything Steam Will Do

LESS ENGINES

AT EVERY TURN

More Recovery By Use of Gas and Air

Introduction Into Sand Aids Crude Oil Production and Reduces Quantity of So-Called Unrecoverable Remainder

By L. L. Brundred*

It is pretty generally conceded by petroleum technologists today that the most important factor in the production of oil is the gas contained in the reservoir. With this assumption in mind, let us consider Sketch F., selecting for our explanation of the theoretical subsurface action, well No. 1. Prior to the drilling of this well, the first in the field, the entire area covered by the sketch was virgin territory under high pressure. Partial liberation of this pressure took place when the well was drilled in and started to produce, this reduction in pressure taking place at first in the immediate vicinity of the well, later spreading gradually in all directions as the well was permitted to continue on production. Graphically considered today, many months after the well was brought in the rings "C", "D" and "E" would then represent the "contours" of pressure, "E" being of lower pressure than "D", "D" being lower than "C". So also would the same theories apply to wells Nos. 2, 3, 4, etc., as each was placed on production.

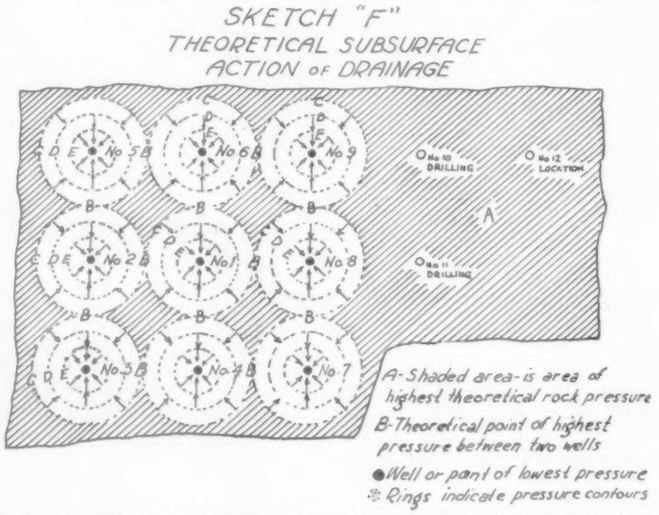
From this it may be observed that the area shaded and marked "A" is the area of highest pressure and therefore of minimum drainage; that at points "B" the pressure between any two producing wells is at its maximum; and that from this point flow may take place in either direction. Oil and gas starting from point "B", a point of relative high pressure, toward the open well, a point of relative low pressure, must first overcome the resistance of the sand to the travel of this oil and gas through it, in order to finally reach the open hole. Thus we see that there is actually a large differential of pressure required to drive the oil to the hole and it is safe to say that in the early life of a field it is this differential in pressure which not only overcomes the sand resistance, but furnishes sufficient additional energy to cause the well to flow. Later, when this differential is materially reduced, the well becomes a pumper. When it is further materially reduced, it is unable to overcome this sand resistance, the well then becomes profitless to operate, and is abandoned, even though the area drained by it still contains from 80 to 85 per cent of its original oil.

Subsurface Movement

So far we have considered the differential in pressure only in the abstract. Let us now consider the action caused by this differential by consulting sketch G.

Let us assume for the sake of argument that we are considering one particular barrel of oil under a rock pressure of 150 pounds at point "m" along contour line "D-D" and a 10 pound back pressure on well No. 1, leaving an actual differential of 140 pounds net. Suppose also that the sand resistance, measured in pounds of pressure, between contour "D-D" and the open well, is but 20 pounds. Under these circumstances oil at point "m" would naturally seek outlet through No. 1 well.

Now, let us assume that the pressure at point "m" is reduced to 140 pounds. This causes a vaporization of a part of the oil at that point and a minute bubble of gas is formed, surrounded by a film of oil. It starts to travel towards point "n", encountering as it goes, the sieve-like action of the sand which breaks it up, forming numerous other bubbles, each surrounded by its film of oil. These films of oil being under the same pressure as the bubbles travel along toward points "n", "o", "p", vaporization of a part of the film takes place, thus forming many new bubbles, each always surrounded by its own film of oil. Again the sieve-like action of the sand tends further to break each bubble, forming many new ones, until we finally have thousands of little bubbles rushing into the well. In the case of a new well they lighten the weight of the column of fluid and actually furnish the energy necessary to make it flow. As time goes on, the number of bubbles decreases, for the supply is limited, and soon there are not enough to furnish this energy. The well then becomes a pumper, these bubbles bursting and rising to the surface as casinghead gas. Later, as the supply of easily vaporized hydrocarbons is depleted, we find our differential in pressure so equally balanced by the sand resistance as to permit of only the most meager travel of oil into the hole. The general result of this condition is abandonment of the well.


SKETCH "F"
THEORETICAL SUBSURFACE
ACTION OF DRAINAGE
No. 10 DRILLING
No. 12 LOCATION
No. 11 DRILLING
A-Shaded area-is area of highest theoretical rock pressure
B-Theoretical point of highest pressure between two wells
●Well or point of lowest pressure
Rings indicate pressure contours

Changes in Saturation

If these hypotheses are correct it readily follows that the oil produced by a flush well does not rush into the hole as a bank or solid wall, similar to the release of a flood of water by the sudden bursting of a dam. On the contrary, we must consider that the entire mass of fluid in any stratum is in constant motion, always moving toward areas of lower pressure, and that no void is left in its wake. Instead, we find this area partially refilled by oil and gas from points of higher rock pressure further back in the sand. This, too, applies to the oil and gas closest to the well, as they are constantly being replaced by other oil and gas coming from behind.

Cores taken in our oldest producing fields have furnished sufficient proof that the saturation in close proximity to some of the oldest wells varies but little from that found in cores taken midway between two old wells and has shown, in almost every instance, a lean but fairly uniform saturation throughout any producing stratum.

Solubility of Gas Into Oil

The question is often asked, "How is it determined that we are producing only 15, 18 or 20 per cent of the oil originally contained in the sand?" This is usually arrived at by a computation based, in general, on porosity, density, saturation, etc. In support of these figures we should consider the solubility of gas into oil.

Recently one of the major producing companies conducted an exhaustive test as to the solubility of wet gas, dry gas, and air into a given grade of oil, taking for the experiment, oil and gas directly from one of their flowing wells. A testing apparatus capable of withstanding pressures as high as 3,000 pounds per square inch was erected in the laboratory and the results carefully tabulated. Suffice it to say that the general results showed as follows:

(a) That wet gas was decidedly soluble in oil.

(b) That dry gas was less soluble.

(c) That air was the least soluble.

Specifically, at 1,200 pounds pressure, it was found that approximately 350 cubic feet of wet gas was soluble in this oil, whereas at 150 pounds pressure but 50 cubic feet went into solution.

It had previously been determined in the field that an average of 1,750 cubic feet of gas was being utilized in producing each barrel of oil, and it seemed to matter little whether the well considered was flowing or pumping.

Now let us consider a theoretical well producing with a rock pressure of 1,200 pounds. Each barrel of oil contains but 350 cubic feet of wet gas. If we utilize 1,750 cubic feet in producing this barrel of necessity we are wasting 1,400 cubic feet. As the only source of this gas is the oil itself, and as all those barrels left in the sand contain but 350 cubic feet each, it will be readily seen that we have actually completely robbed 3.7 bbls. of all available gas.

Now, let us consider the same well after the rock pressure has been reduced to 150 pounds. The oil then contains but 50 cubic feet of wet gas. It must now be apparent that the waste has mounted to 1,700 cubic feet. Yet, as the oil left in the sand at this reduced rock pressure contains only 50 cubic feet it must be noted that this robbing process has rapidly increased, until now we have completely depleted 34 bbls of all available gas. Small wonder it is then that we leave enormous quantities of unrecoverable oil in the sand.

Ratio of Gas to Oil Important

To date only a few of the most progressive companies have paid more than a passing attention to the amount of gas or energy wasted in producing a barrel of oil. Needless to say, the amount of easily vaporized fluid (gas) available in the sand is extremely limited and, if the assumptions given are correct, such waste

*Delivered at Tulsa, Okla., October 11, 1926, before the Petroleum Division, American Institute of Mining and Metallurgical Engineers. Held in co-operation with the Mid-Continent Oil and Gas Association.

DEVELOPMENT AND OPERATIONS IN THE TEXAS PANHANDLE FIELD

By E. J. McKee*

A few of the wells in the Panhandle do not make their production by natural flow but in most of them some artificial means, either swabbing or pumping on the beam, must be used. On two of our wells on which we have taken the load in pounds, we found the following conditions: No. 7 Coble producing 200 bbls. with 2-inch upset tubing and ⅝ rods, no water or paraffin, showing a lift of 12,000 pounds, No. 8 Cable with the same equipment and the same amount of production, but production being 2 per cent water and 3 per cent paraffin and b.s., showed a lift of 15,500 pounds.

In pumping operations we have a great deal of trouble from paraffin, which necessitates pulling rods every two or three days to remove accumulations. By pulling rods before much can be deposited, we avoid more tubing jobs. In a few wells where rods were not pulled for 10 days or 2 weeks, tubing and rods had to be pulled together and the tubing steamed to remove the deposits of paraffin. After a few wells have been pumped for some time, the time limit on pulling rods to remove paraffin increases. One such well went as long as three weeks before rods were pulled, and then showed only a small deposit. For two weeks after it was first put on the pump, rods had to be pulled every two days and the tubing every six days to remove the accumulated paraffin.

Character of Crude

Most Panhandle crude has a straight paraffin base and the deposition of this paraffin in the casing, tubing and rods causes unnecessary pulling and much trouble to swabbing wells in the excessive load on the swab. The characteristics of this wax are as follows:

Gravity, °B.	12.5
Melting point, °F.	140
Initial boiling point, °F.	230
Water, per cent	3

It contains suspended sand, shale and sulphur, but consists chiefly of pure paraffin wax. Upon heating to distill, it gives off hydrogen sulphide. Concentrated sulphuric acid has little action on the wax even when heated. All of the waxes encountered are to a great extent chemically inert and to date we have been unable to find any chemical that will react with them. The only thing that has any apparent effect is heat. Whenever chemicals were used and the wax dissolved any, the effect was due to the heat of reaction with the substance used and the water contained in the paraffin, not to the effect of the chemical on the wax.

The temperature of the oil coming from the wells is sometimes as low as 58 degrees Fahrenheit. To date we have been unable to get any reliable data as to the sand temperatures, but from close

(Continued on Page 82)

*Production engineer, Phillips Petroleum Co. Before Petroleum Division, A. S. M. & M. E., Tulsa, Okla.

Here are four "U.S." Packings built for refinery service—

F.O.P. Asbestos Fibre Oil-Proof Sheet Packing

Recommended for flanges on hot oil, cold oil, benzine, naphtha, gasoline, mineral seal oil, high or low pressure saturated or super-heated steam. It has no equal for high pressure cracking still head gaskets. Will not soften in hot oil at any temperature. The best sheet packing for all types of gaskets on gas or oil engines, compressors, or extreme dry heat conditions.
The only asbestos fibre sheet packing developed exclusively for refinery, gasoline plant and oil industry conditions.

"U.S." Rainbestos High Pressure Packing

Recommended for packing rods against high pressure steam and air. Especially adapted for general service in refineries for stuffing boxes in pumps handling gasoline, hot or cold oils, etc.

"U.S." Peerless Piston Packing

Recommended as the best all-around piston rod packing for saturated steam up to 159 pounds pressure. Particularly adapted for use on high speed engines.

Black Hawk Hi-Heat Metallic Packing

For packing rods against super-heated steam, air, hot oil, tar, pitch, asphaltum, etc. For all extreme pressures and temperatures. Especially adapted for casinghead gas compressor and hot mineral seal air rods.

"U.S." Packings do make a difference—

There's a "U.S." Packing specially built for every refinery need—

Every time a packing goes wrong it means a shut-down for repacking—and a resultant drop in output somewhere along the line.

There *is* a difference in packings. Ask your pump men. Any old packing won't do. Packings that give unfailing service under straight steam often fail to make the grade when they buck up against the "oil test."

Back in the days before Cushing and Burkburnett came in—long before the refineries that followed these fields were thought of—the packing experts of the United States Rubber Company were analyzing the operating problems of the refiner.

We're mighty proud of the fact that a large proportion of the refineries running oil from these famous fields, and the most important fields developed since then, have standardized on "U.S." Packings.

No other packing manufacturer has made such a thorough investigation of the packing requirements of the modern refinery and gasoline plant as has the United States Rubber Company. There is not a condition from the handling of crude in the pipe line to the various pumps carrying gasoline, kerosene and hot oils, down to hot tar, that is not being packed successfully and economically with "U.S." Packing—sheet, gasket and pump.

Refinery records show that "U.S." Packings *do* make a difference.

United States Rubber Company

1790 Broadway **New York City**

OIL FIELD SALES BRANCHES:

Tulsa, Okla.	Pittsburgh, Pa.	Kansas City, Mo.
Houston, Texas	New Orleans, La.	Chicago, Ill.
Dallas, Texas	Los Angeles, Cal.	Memphis, Tenn.
St. Louis, Mo.		Columbus, Ohio

"U.S." PACKINGS

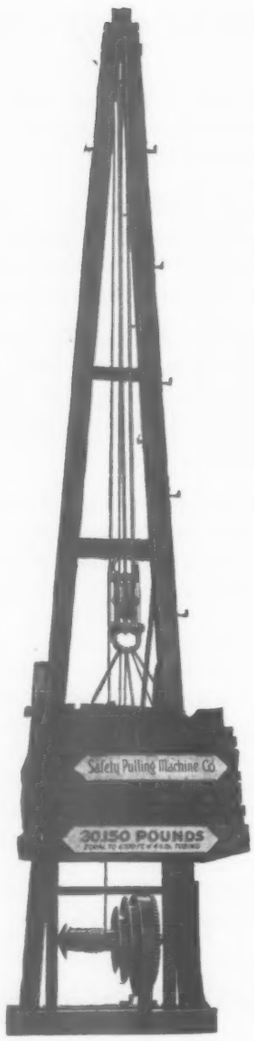
for every refinery and oil-field need

Safety—

With the

Eclipse Deepwell Pulling Machine

You Eliminate Danger and Prevent Risks



Specifications Deepwell

Eclipse Deepwell up to 8000 ft. 2" Tubing, Weight.....3645

Mast 8x10x36 ft., Douglass Fir A-Style Two Wheel Truck, two 16" Bronze bearing crown pulleys, 2½ Steel Pin mounted in malleable boxings. Large supporting plate 16" dia. between crown pulleys, eliminating any chance of bending pin.

Reel or Drum; 32 lb. 8¼ casing filled with concrete for winding drum, differentials banded with 3/16 band iron, brake surface 6"x40", choke brake style same as Star drilling machine.

The whole reel assembly is mounted on 2¾ square steel shaft extending clear through reel, secured by three heavy castings.

For sale by all Supply Companies

Manufactured by

SAFETY PULLING MACHINE COMPANY
INDEPENDENCE, KANSAS

constitutes ample reason for urging extreme conservation of this vital asset.

Findings

(a) Examination of Cores. This discloses that:

1 Few solid bodies of pay sand exist without breaks.

2 Often water and gas strata are interspersed with saturated oil sands.

3 Lenticular sands are commonly found.

4 Cross-bedded and fractured sands are also commonly found.

5 Cementing material varies greatly in the different strata.

6 Porosity and saturation can be determined with a fair degree of accuracy.

7 Fairly uniform saturation in any given stratum is the rule.

8 There can be little vertical travel of gas, water or oil from one stratum to another.

(b) Condition of Gas. The bulk of gas contained in an oil producing reservoir is in a liquid state.

(c) Productive Energy. Vaporization of the lighter hydrocarbons furnishes the motive power to produce the oil.

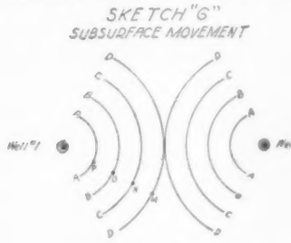
(d) Solubility of Gas. Solubility of gas into oil is an established fact.

(e) Normal Recovery. Only inefficient recovery can be expected from present producing methods and waste of gas must be prevented.

Theory of Methods of Introduction of Gas or Air to Increase Normal Recovery

The general fundamental scheme of this method of operation is to rebuild the rock pressure, already seriously depleted by the escape or waste of gas and partial removal of oil. In actual operation gas or air is pumped into an old producing well or into one drilled for the purpose.

Returning to Sketch F we may observe the theoretical subsurface action resulting from the injection of this gas. As soon as the gas is pumped in all flow of gas and oil from the sand into the well is stopped, gradually the action is reversed,



A-A- Lowest Pressure Contour
B-B-Next Lowest Pressure Contour
C-C-Next Lowest Pressure Contour
D-D-Highest Pressure Contour

and the pressure contours change places. Contour "E" then becomes the highest, "D" the next highest, and "C" remains momentarily the same. Continued injection of the gas gradually raises all of these pressure contours until all flow takes place toward the open or surrounding wells.

We have seen that gas and air are both soluble in oil. Pumped into the sand as just described, a maximum amount of such gas naturally comes into direct contact with a maximum amount of oil. As we have seen, this oil already has been largely depleted of its lighter vapors. Naturally, absorption takes place rapidly, as the very separation of the particles of oil by the grains of sand permits of maximum exposure to the incoming gas.

The solubility of gas into oil being largely dependent upon pressure and being materially aided by agitation, is there any wonder then that this gas being pumped into an oil sand under relative high pressure, vainly seeking its way out, spreading first in this direction, then in that, is a fit subject for absorption into the oil left in the sand?

Returning to Sketch F: The original contour of highest pressure, "C", is now at the well itself. Our new contours of pressure, representing a gradual reduction in pressure, now radiate from this as a center, spreading in all directions until the offset wells are finally reached.

In the case of the original producing well these contours represented the differential in pressure in the area surrounding the well, this pressure being reduced daily as it was not fed from any extraneous source. In contradistinction to this, the area surrounding the injection well is constantly being fed by gas introduced at the surface and the differential in pressure so necessary to produce the oil is supplied and maintained by the operator himself.

Subsurface Action

Once that absorption of the injected gas has taken place it again performs its original function, that is of revaporizing upon a slight reduction in pressure. Again the little bubbles are formed, each surrounded by its film of oil, again these bubbles pass through a veritable sieve, and again they are separated into a thousand little bubbles, each one of which carries its film of oil until finally they find their way into the surrounding producing wells. Here, they deposit their load, thus contributing to the general accumulation of oil in the hole. As before, they burst and rise again to the surface as casinghead gas.

Gasoline Recovery

When dry gas is introduced into a sand where intimate contact with the oil takes place, there can be little doubt that it goes into solution, later expanding and performing its duty of bringing oil into the surrounding wells, and thus picks up gasoline vapors which may be extracted in a gasoline plant. The dry gas now converted into a wet gas will be found to contain very nearly the same gasoline content as the original natural wet gas.

In support of this statement, there is an old property in Pennsylvania upon which a gasoline plant had practically ceased to be profitable, due to the serious depletion of their source of supply of wet gas. An experiment was attempted whereby natural dry gas was purchased from one of the public service gas companies at 60 cents per thousand feet and injected into the sand through one of the old producing wells. Soon it was found that the normal oil production and the supply of wet gas had gradually increased until the gasoline plant became an asset instead of a liability. Today this company finds itself with almost enough gas for constant circulation and the necessity of purchase of the expensive natural gas has practically disappeared.

DEVELOPMENT IN THE TEXAS PANHANDLE

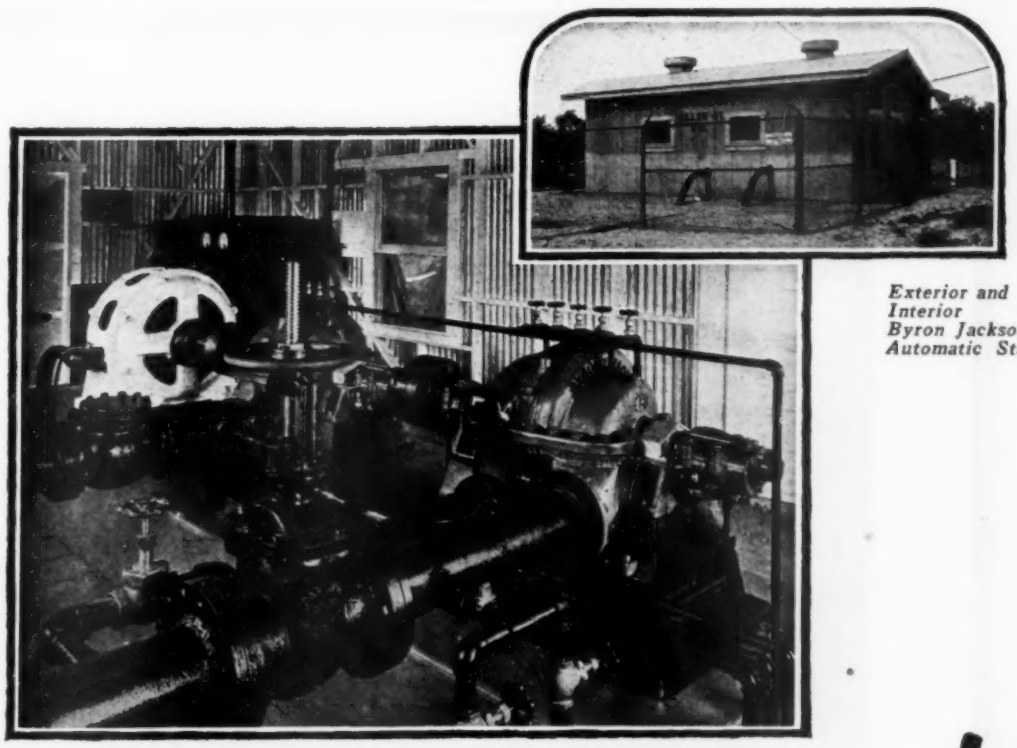
(Continued from Page 80)

observance of the tubing, paraffin begins to deposit about 700 feet from the surface and is probably due to refrigeration caused by the expansion of gases at this point. In the transportation of the crude from the well to the receiving and storage tanks, all lines must be insulated in some way to protect them from low atmospheric temperature in the Panhandle during the winter months. What the insulation will be has been a source of much discussion and of research for something that is effective as well as economical. In our operations, we expect to bury all lines with a covering of at least 32 inches of earth, the line to be laid on blocks in the ditch and parallel with a 1-inch steam line for applying heat if needed. This heat will be supplied from a 35 horsepower mounted boiler, to be moved where needed and to be a part of each lease equipment.

By reference to topographic surveys we have tried to place all flow and receiving tanks with enough grade of fall so that lines will clean themselves by gravity.

Effect of Heating

Eight samples of Texas crude were examined to study the effect of heating on the congealing points. The viscosities and pour points were detrimental (Table I) and used to get some mental picture of the molecular aggregations in these crude oils. Heating to 190 degrees Fahrenheit seems to break up these molecular aggregations, or to depolymerize the higher paraffins, and consequently the crude oil



Exterior and Interior Byron Jackson Automatic Station

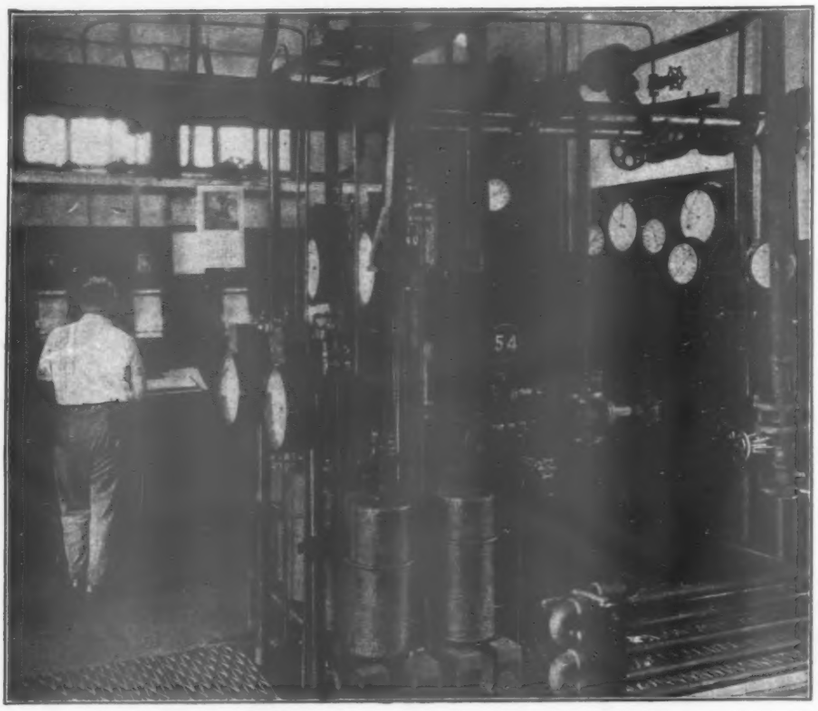
Byron Jackson automatic oil line pumps *save!*

The advantages of Byron Jackson special centrifugal electric multiplex oil line pumps are many:

Automatic in operation, minimizing attendance expense.
No tanks, no loss from evaporation.
Steady flow, free from destructive pulsation.
Cost less than reciprocating pumps; less for buildings and less for maintenance.

Byron Jackson special centrifugal electric multiplex oil line pumps are proven equipment used by some of the most progressive companies.

BYRON JACKSON
PUMP MANUFACTURING CO. INC.
FACTORY AND MAIN OFFICE: BERKELEY, CAL.
BRANCHES: SAN FRANCISCO, LOS ANGELES, VISALIA, PORTLAND, OR. SALT LAKE CITY



Interior View of Control House, Holmes-Manley Cracking Process

From this point–
One Operator controls
Four Units.

The Holmes-Manley *Cracking* Process

Through unique features and positive control, this process is pre-eminent in its production of quality gasoline. ✦ ✦ ✦ ✦ ✦

The Licensee receives:—

1. *A Proven Process*
2. *Complete Technical Service*
3. *The Benefit of Future Developments*

Licenses Granted by

THE TEXAS COMPANY, U. S. A.

Apply to

W. S. S. RODGERS

17 Battery Place, New York, N. Y.

Only a few months old—
But—
Making oldest "old-timers" sit up and take notice!

Fig. 1 Exterior View

Fig. 2 Sectional View Patented

Baker Standard Core Barrel

CABLE tool coring is too important a part of your drilling for you to be satisfied with anything but the most reliable and efficient core getter.

The Baker Standard Core Barrel (illustrated) is already making remarkable records. In hardest formations around 4,000 feet it gets two-foot cores and longer that tell you what you want to know. The largest and most experienced cable tool operators in the west are re-ordering after making exhaustive tests. There is sincere enthusiasm and praise everywhere for this newest cable coring invention.

HERE is the new principle of design responsible for the instantaneous success of the Baker Standard Core Barrel. The tool consists of a hollow drill barrel which telescopes over an inner core barrel, each of which contain a valve mechanism. The valve in the drill barrel head allows fluid to enter between it and the inner core barrel head on the up-stroke. On the down-stroke the valve closes and the fluid is forced out, at the same time creating a water cushion between the heads as soon as the drill barrel shoe strikes the formation. The valve in the inner core tube permits the escape of fluid as it fills with the core. A clean, unaltered core of generous size and length under ALL conditions is the result.

Write for new folder giving full mechanical description and method of operation. It will interest you.

Mid-Continent Representative:
B & A Specialty Co.,
404 W. First Street,
TULSA, OKLA.

BAKER CASING SHOE COMPANY

Export Representative:
Buck & Stoddard,
25 Broadway,
NEW YORK CITY

Box L, Huntington Park, California
COALINGA, CALIFORNIA
GEORGE J. HAUSEN, Inc., *Representative,* Taft, California

becomes more limpid and has a lower congealing point. But the crude oil on standing several days at room temperature, tends to go back to the original state, approaching its original the viscosity and pour points. The speed of this repolymerization varies with different crudes depending on the constituents.

In a few oils apparently the viscosity decreases which is due to the settling out of small amounts of asphaltic material. This material is strained out in pouring into the Engler viscosimeter. The congealing points and pour points tend to become the same as that of the original crude.

Effect of Heating on Viscosities

The effect of heating a crude petroleum (Weatherly No. 1) at temperatures of 130, 160, and 190 degrees Fahrenheit, recording the changed viscosities at different time intervals, was shown in tests. The original viscosity of the crude was 99 Saybolt seconds. The viscosity of sample No. 1, heated under a reflux condenser to an oil temperature of 130 degrees Fahrenheit, was 62 Saybolt seconds, or a decrease of 37. In other words, the fluidity was increased about 36 per cent. The viscosities determined after the oils had stood show a gradual increases. After 20 hours in the ice box, the viscosity is still lower than that of the original sample of crude (Saybolt seconds) but upon longer standing this would undoubtedly reach that of the original crude oil.

The explanation of this phenomenon is probably due to the depolymerization of the higher hydrocarbons to form simple molecules when heated. It is not cracking, because on standing the paraffin hydrocarbons polymerize again and thus return to the same viscosity as the original crude.

Perhaps neither the pour point nor the viscosity at various temperatures, as ordinarily determined, tell us what we are after in getting the congealing temperature of the oil. The time element is not taken into consideration. Rapid cooling, as done in these tests, tends to give a supersaturation of paraffins. This is evidenced in the difficulty of checking pour tests and viscosities when the oil has stood in the instrument for different time intervals. Paraffin wax requires hours and even days to crystallize out. In the field, the slow crystallization of paraffin takes several days.

Hence it would seem, in the preliminary tests, impractical to try to heat a crude oil below the cracking temperature in order to prevent paraffin from crystallizing out in the tanks or pipelines. It would have a desired temporary effect, but its work is questionable if the oil is going to be long in transit where it will have to stand sometimes for several hours.

As so many problems confront the operators in the Panhandle Field, any definite method of procedure cannot be outlined now. Until the field has been worked for some time and experiments have been made, more or less of a cut-and-try program will be the order in pumping throughout the field, while we seek some efficient and economical operating methods to produce oil and show a column on the right side of the ledger.

Table 1.—Data on the Effect of Heating Eight Samples of Texas Crudes

	Gravity B.	Viscosity, Saybolt, Sec.	Congealing Point, ° F.	Pour Point ° F.
1. J. H. Middleton, No. 1 Weatherly.				
Original crude	38.6	283	70	62
Heated to 190° F.	38.2	115	50°(?)	40
Heated sample after 24 hours		125		50
Heated sample after 8 days		156	70	60
2. J. R. Phillips, No. 60 Weatherly.				
Original crude	27.5	232		82
Heated to 190° F.	27.2	206		80
Heated sample after 8 days		220		80
3. J. R. Phillips-Currie No. 1 Smith.				
Original crude	39.8	124	60°(?)	58
Heated to 190° F.	39.3	103		Below 20
Heated sample after 8 days	39.2	118	65	60
4. Lucky Ten Oil Co., No. 1 Smith.				
Original crude	39.3	115	About 55	45
Heated to 190° F.	39.2	95	About 50	38
Heated sample after 8 days	39.2	113	55°(?)	45
5. McIlroy Oil Co., No. 2 Smith-Capers.				
Original sample	35.5	475	About 65	58
Heated to 190° F.	35.3	185		Below 20
Heated sample after 6 days	35.4	430		60
6. McIlroy Oil Co., Nos. 1 and 3 Smith-Capers.				
Original crude	36.5	1800	(approx.) 60	70
Heated to 190° F.	36.4	171	(approx.) 40	32
Heated sample after 3 days	36.4	324	(approx.) 65	58
7. Phillips Petroleum Co., Block 62, No. 2.				
Original crude	35.4	677	52	78
Head to 190° F.	35.5	297	54	45
Heated sample after 4 days	35.2	290	60	55
8. Phillips Petroleum Co., Block 62, No. 1.				
Original crude	37.8	358	78	72
Heated to 190° F.	37.6	121	35	26
Heated sample after 4 days	37.6	210		45

KENTUCKY-TENNESSEE

(Continued from Page 71)

in Kentucky for September, totals 405,396.80 bbls., against the August figures of 394,607.75 bbls., a gain of 10,789.05 bbls. for September.

Tennessee

Toward the close of September the Paragon Development Co.'s pipeline extension from Cumberland County, Kentucky, into the Celina Field, in Clay County, Tennessee, was completed and before the close of the month a total of 2,993.70 bbls. was run through the line, giving the Peterman Bend, or the Clark Hill Pool, its first outlet for its crude and operators are feeling jubilant over the prospects and a real active drilling campaign is looked for. Well owners are receiving from the Paragon company, the regular Somerset price, which is $2.65 per barrel. This makes two pipelines now in Clay County, as the Stoll Oil Refining Co. has a line from the Tinsley's Bottom Pool to Windle and, like the Paragon lines, passes through a territory that is pronounced by geologists to be promising for development.

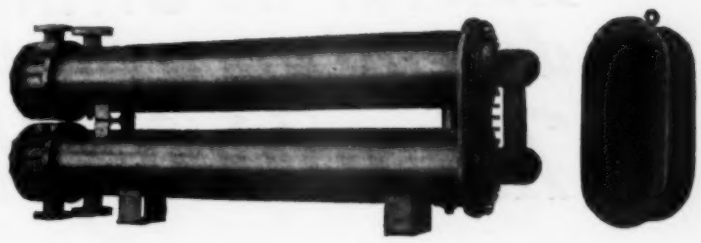
The initial well, on the J. Will Pennington farm, on Mill Creek structure, 4 miles south of Celina, in Clay County, owned by David McGowan, of Springfield, Ohio, and drilled by the old-timer, John H. McClurkin, originally reported as a producer at a depth of 406 feet in the Upper Tinsley Bottom pay, was drilled to 452 feet where, as reported last week, it broke loose with a heavy flow and filled a 250-bbl. tank over night and equally as much oil was lost and ran down Mill Creek for a distance of 4 miles, there being a defect in the oil saver. This gusher is on the fourth structure worked out by J. H. McClurkin, that has proven productive, three of them in the McClurkin Pool, 4 miles south of Celina, on Mill Creek. The well recently drilled by Mr. McClurkin on the Lem Cunningham lease will be drilled to the Lower Tinsley Bottom sands. The new strike on the Pennington farm has caused quite a flurry and leases are changing hands at fancy prices. Several wells are now drilling near Celina and several new locations staked out for wells that will be started as soon as rigs can be procured. The wells in Peterman Bend, also located by McClurkin, are regularly running oil to the new pipeline of the Paragon Development Co. and are holding up nicely. The Pennington well found an 18-foot pay sand, 106 feet below the Pencil Cave formation.

Eastern Kentucky

In the deep sand fields bordering West Virginia, where many long-lived wells

(Continued on Page 107)

The same duty in almost half the length



The G-R Twin Heat Exchanger

is only a little more than half the length of a single unit designed for the same duty.

This means a more compact apparatus, with less expansion and resulting strains on piping connections, smaller space required for tube bundle removal, and high salvage because of ease of disconnecting, transporting and re-erecting at new locations to meet changing conditions.

And these are only part of the advantages of the G-R Twin Heat Exchanger. This unit, used for interchanging heat between crude oil feed stock and still bottoms, cold water and hot oil, feed stock and hot still vapors, etc., will speed up your refining operations and reduce your refining costs.

THE GRISCOM-RUSSELL COMPANY

Dept. J, 285 Madison Ave., New York

Philadelphia	Chicago	St. Louis	San Francisco
Boston	Detroit	New Orleans	Los Angeles
Rochester	Cleveland	Dallas	Seattle
Pittsburgh	Milwaukee	Houston	Salt Lake City
Columbus	Minneapolis	Atlanta	Tulsa
Indianapolis	Kansas City	Charlotte	Denver

For Canada: Riley Engineering and Supply Co., Ltd., Toronto

Griscom-Russell

Send the coupon for full information

THE GRISCOM-RUSSELL COMPANY,
Dept. J, 285 Madison Ave., New York.
Send full information, without obligation, on the G-R Twin Heat Exchanger.

Name .....

Company .....

Address .....

O&GJ 10-21-26

Insofar as Ultimate Success will depend upon the Pipe and the Casing-

These Wells Have No Worry

PLANS have been extensive—cost will be considerable—good producers are desired—but what will the answer be?

In the drilling of these wells, every modern facility for success was applied—there were no substitutes for quality materials. And with the other dependable equipment went "NATIONAL"—greatly minimizing the worries of drilling. For, insofar as ultimate success will depend on the Pipe and the Casing—these wells have no worry. Great is the strain on the tubular material—faithfully will "NATIONAL" bear it. Here's modern pipe for modern wells, promising: smoother progress—reasonable cost—and the best insurance for successful results.

To those interested, we will be glad to furnish booklet, entitled: "Plain Facts About Casing, Drill Pipe and Tubing," giving valuable information for the operator, the contractor and the driller.

NATIONAL TUBE COMPANY

Frick Building, Pittsburgh, Pa.

DISTRICT SALES OFFICES IN THE LARGER CITIES

"NATIONAL"

CANADIAN FIELDS

(Continued from Page 58)

is working in a very hard formation with some traces of crude oil. This well is the third deepest in Canada and has, it is claimed, the second largest string of 8¼-inch casing in the world. At this depth it is apparently in or close to the top of the Madison limestone, the deep lime at this point being lower even than in the Vulcan No. 1.

It is reported that Royalite Oil Co.'s No. 4, LSD 12, Section 7-20-2w5, is showing a marked decline in wet gas production, the normal flow of around 18,000,000 feet a day dropping to about 6,000,000 feet. The decline is thought to be temporary and due to freezing of limestone particles at the bottom of the hole, and it is expected that accumulated pressure will restore normal production. Royalite No. 5, LSD 13, Section 7-20-2w5, is at 3,527 feet and fishing. Royalite No. 6, LSD 16, Section 31-19-2w5, is at 3,079 feet and underreaming.

Dalhousie Oil Co.s No. 1, LSD 4, Section 18-20-2w5, is at 3,582 feet and shut down waiting for casing. Dalhousie No. 5, LSD 16, Section 30-19-2w5, has cemented the 12½-inch casing at 2,265 feet and resumed drilling. Dalhousie No. 6, LSD 10, Section 13-20-3w5, is digging cellar and moving timbers from Okotoks to location.

Dallas Oil Co., LSD 11, Section 20-19-2w5, is running 8¼-inch casing to 3,100 feet and is having some difficulty with caving. Calmont Oils, Ltd., LSD 2, Section 1-20-3w5, is shut down at 2,210 feet waiting for 12½-inch casing. Big Chief Oil Co., Section 5-20-2w5, which entered the Dakotas at 2,750 feet, is at 3,100 feet and drilling open hole for the 8¼-inch casing. Cooper-Nanton Oils, LSD 2, Section 7-20-2w5, is at 3,500 feet and drilling for 8¼-inch casing.

New Valley Oil Co., LSD 4, Section 6-21-2w5, is at 1,320 feet and running double tour. At 1,300 feet a small show of dark green oil was met, and the drill is now working in a hard formation. The Dakota sand is looked for at 2,000 feet.

British Dominion No. 1, LSD 4, Section 5-20-2w5, is at 2,700 feet and working on 10-inch casing. The rig is being housed for winter drilling. Home Oil Co. No. 1, LSD 10, Section 20-19-2w5, is at 2,265 feet and running 10½-inch casing. The former Advance Oil Co. No. 1, LSD 14, Section 20-19-2w5, which has been standing at 3,160 feet, has been taken over as Home No. 2. Advance No. 2, same section, which is being continued as Home No. 3, is at 1,280 feet and working on casing. Canada Southern No. 1, LSD 9, Section 1-20-3w5, has resumed drilling at 2,510 feet, after cementing the 8¼-inch casing at 2,430 feet. Highland Oils, Ltd., LSD 5, Section 5-20-2w5, has set 15½-inch casing at 1,550 feet and resdumed drilling. Stockmen Oil Co., Section 27-20-3w5, has set 15½-inch casing and is at 1,500 feet and drilling open hole for the 12½-inch.

Dolomite Oils, Ltd., LSD 8, Section 1-20-3w5, 660 yards south of McLeod No. 2, has spudded in. Hylo Oils, LSD 13, Section 20-19-2w5, is doing some preparatory work on the drilling site, and will shortly start rigging up. H. J. Duffield is surveying the site for Titan Oils, LSD 2, Section 18-20-2w5, and that for Anaconda Oil Co., LSD 13, Section 20-19-2w5. Both tests will start rigging up this month. F. C. Beresford will have charge of the field work for all three companies.

Seneca Oils, LSD 1, Section 34-20-3w5, is at 1,000 feet and running casing.

In the Moore Mountain Field, Wabash Oils, Ltd., Morley Indian reserve, has cellar and camp completed and is working on derrick with most of the equipment on the ground. Lloyd Journey of Los Angeles has the contract. Kevin-Sunburst Holding Corp. of Shelby, Mont., has taken over 160 acres in this field.

Drumheller Oils, Ltd., is arranging for a contract test in the NW of Section 23-29-20w4, 3 miles north of Drumheller.

Considerable interest is being shown in the test on the Ranchmen's Gas & Oil Co., in LSD 16, Section 13-20-29w4, near Aldersyde. The area is almost due south of Calgary and somewhat east of the Turner Valley, the present structure having been recently defined by Gordon Campbell, discover of the Sunburst Field in Montana. Derrick timbers and equipment are now on the ground and the test will probably spud in early in October. The test, which is financed largely Aldersyde capital, will be drilled by John Drader. Indications of shallow gas are numerous, including seepages in the bed of Sheep Creek a quarter mile from the well site, and gas production from several shallow wells. A test drilled to 275 feet on the Bird farm about 1912 had a measured production of 438,000 feet a day with 83 3-10 pounds pressure, and this well is still producing 72,000 feet a day. Another well on the same farm drilled by Sam Drumheller and associates to 930 feet depth in 1921 is making 100,000 feet a day or better. Two shallower tests close to the well site are also productive. The Ranchmen's Gas & Oil Co. will, however, drill a deep test, and is planning to go to 3,500 feet if necessary, with oil production anticipated around 2,600 feet.

In the Ribstone Field, east of Edmonton, Imperial Oil, Ltd., Ribstone No. 1, Section 5-45-1w4, is drilling at 1,570 feet with rotary with a fair showing of gas. Imperial-Bow River No. 1, LSD 15, Section 12-25-5w5, in the Jumping Pound district west of Calgary, is at 4,010 feet and drilling. In the Highwood district southwest of Calgary, Imperial-Highwood No. 1, LSD 3, Section 36-18-3w5, is at 535 feet and drilling. In the southern foothills west of Nanton, Imperial-Rice Creek, Section 4-14-2w5, is at 5,240 feet and drilling. In the Border Field east of Coutts, Imperial-Erickson Coulee No. 1, LSD 13, Section 8-1-12w4, is at 2,445 feet with the 8¼-inch casing at 2,436 feet. The casing is being carried down right behind the drill. In the Bow Island Field, Imperial-Burdett No. 1 deep test is at 2,812 feet and drilling.

In the Border Fields, the Devenish Petroleums, LSD 5, Section 27-5-14w4, has been cemented again to shut off the water at 753 feet and is being given a pressure test. Near Coutts, Urban Oils, Ltd., Section 4-1-15w4, is reported at 3,113 feet and drilling in the limestone with a 4¾-inch hole. Between 3,095 and 3,100 feet a 5-foot oil sand was encountered, making about 1 bbl. a day. A similar showing was encountered a little deeper. Drilling will be continued in the limestone to 4,000 feet if necessary. In the same vicinity, but just a little south of the international boundary, a Winnipeg syndicate is spudding in a test close to the McLean Mitchell well. This is the northermost test yet drilled in the Montana Field.

It is reported that the Julian Petroleum Corp., which recently concluded a $3,000,000 deal for the Rice-Fulton properties in the Kevin-Sunburst Field, is negotiating also for the Rice-Fulton interest in the Maple Leaf refinery at Coutts, Alta.

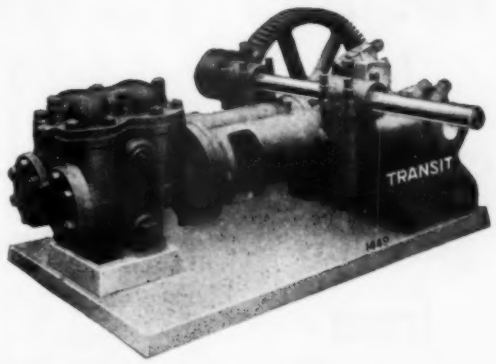
West of Macleod, Alta., the Southwestern Coal, Oil & Gas Co. has arranged with two outside companies for tests on its extensive acreage.

In the Redcliffe Field, the C. E. Roth Syndicate's No. 2 deep test has finished running 15½-inch casing and resumed drilling at 700 feet.

In the Montana fields, Swift Current-Lashbaugh No. 3, NE SW SE, Section 27-35-2w, was drilled into the lime to test the horizon at which O'Neill-Lashbaugh No. 5 got its main production, but got nothing. The well was accordingly plugged back to the Ellis sand where a shot developed a 25-bbl. producer. The entire depth was 1,600 feet, the Ellis being from 1,435 to 1,445 feet. Oak Oils, Ltd., of Calgary has taken over the Big Elephant-Strange No. 1 west of Kevin, and is trying to clean it out and bring it back into production. Wolfe development Co. No. 3, Section 27-35-2w, is reported drilling below 750 feet. Monalta Oils, Ltd., is arranging to drill a series of three tests about 4 miles west of No. 1 dry hole. Myers Development Co. of Calgary is hauling material for a test

TRANSIT

Powerful Pumps



3x10" Klein Type Duplex Piston Power Pump. Will pump 75 bbls. per hour against 800 lbs. pressure.

The Klein Type fluid end always has been one of the stand-bys of the oil fields.

Since the call for power pumps has become so insistent, we have coupled an up-to-date power end to an old reliable Klein Type fluid end, with remarkable results.

The outfit complete weighs little over a ton. It makes an ideal field pump, or an oil salvaging pump to mount on a truck. With a working pressure of 800 lbs. it is often used to pump oil direct into main lines.

Many other uses will, no doubt, present themselves to men interested in a small economical power pump of relatively high working pressure.

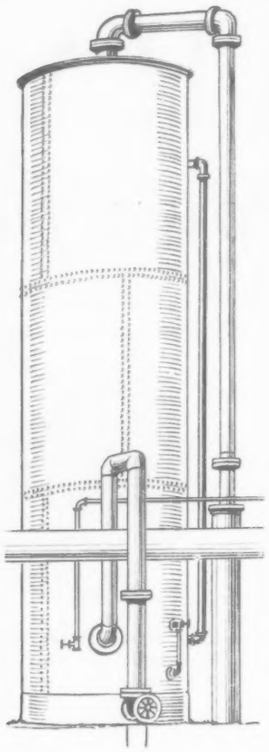
Prices and description on request.

NATIONAL TRANSIT
PUMP & MACHINE CO.
OIL CITY, PA.

DISTRICT OFFICES

New York Philadelphia Pittsburgh
Cleveland Houston Tulsa Denver

The 2 essentials for extracting gasoline from natural gas



FIRST

TRANSFER gasoline from the gas, its natural carrying medium, to absorption oil, a medium from which it can more readily be isolated.

CAMPBELL OIL-FROTH ABSORBERS effect this transfer efficiently and thoroughly.

SECOND

SEPARATE the gasoline thus absorbed from the oil so that this "carrier" may go back to the absorber "empty" for another load.

CAMPBELL OIL-FROTH STRIPPERS effect this separation with a low agitation ratio and their reflex fractionating section cuts the load on the dephlegmator surprisingly.

One of these strippers in conjunction with a pipe coil dephlegmator, about which we will be glad to tell you, makes a combination that for steady production and point and color control cannot be excelled in the opinion of many operators who are now using them.

J. A. Campbell

CONSULTING—DESIGNING—CONSTRUCTING

Natural Gas Engineer

P. O. Box 669 LONG BEACH, CALIFORNIA

CAMPBELL OIL FROTH absorber

of the Valentine structure in the eastern part of Fergus County, Montana.

In the Irma-Wainright Field, east of Edmonton, Western Conosolidated No. 2, Section 30-45-6w4, has been drilled into the sand, developing an estimated production of 100 bbls. a day or better. It will be put on the pump as soon as equipment can be installed. The well finished with 6¼-inch casing and is in good shape for production with the water shut off. The drilling outfit will be moved to Western Consolidated No. 1, LSD 8, Section 20-46-6w4, which has been shut down at 1,400 feet but will now be finished.

Edmonton Wainwright Oils, LSD 4, Section 29-45-6w4, which has been producing steadily for some weeks, is held up by a fishing job. Mewasin Oils, Ltd., which has a location in LSD 7, Section 30-45-6w4, has taken over Emerald Oils, Ltd., and will complete the Emerald deep test, LSD 8, Section 30-45-6w4, which is now drilling around 2,500 feet. Wainwright-Dome Oils, LSD 7, Section 31-45-6w4, has spudded in. British-Wainwright Oil Co., LSD 13, Section 20-45-6w4, is rigged up ready to spud in. British Petroleums, Ltd., is strengthening the derrick at No. 4 well, Section 30-45-6w4, and as soon as the Emerald Oils' deep test is finished, the derrick will be moved to B. P. No. 4 site and the well deepened. Last summer the well was swabbed for several months and considerable oil sold to the C. N. R. for fuel.

Fabyan Petroleums, Ltd., LSD 8, Section 24-45-8w4, is shut down at 1,100 feet and may not resume till next spring. Interior Oil Co., Section 36 44-7w4, which has been shut down at 1,500 feet, has secured additional capital from Winnipeg interests and resumed drilling with a double shift.

Sasko-Wainwright Oil & Gas Co. has been organized with $500,000 capital and head office at Saskatoon, Sask., and will drill a test in Section 19-45-6w4, just south of the heavy crude producers in the Wainwright Field. Officers of the company are: President, J. C. McLeod, Wainwright, Alta.; vice president, Charles H. Spencer, Saskatoon, Sask.; secretary-treasurer, G. W. A. Braithwaite, Saskatoon; directors, C. Shier, Colonsay, Sask.; A. Robertson, Perdue, Sask.; J. G. Morton, Wainwright.

The high pressure gas line from the Maple Leaf gasser in the Wainwright Field is now completed almost to the town limits of Wainwright, and it is expected that gas will be delivered by November. A considerable portion of the distributing system has also been laid.

In the Ribstone Field Glenbow Oils, Ltd., which already has a location in the Turner Valley, has spotted a test in the west half of Section 24-44-2w4, 2 miles south of Imperial-Ribstone No. 1. The Glenbow will spud in within 60 days, the test being drilled under contract. Ribstone Oils, LSD 1, Section 1-46-1w4, is at 260 feet and drilling. Advance Oil Co. No. 3, LSD 1, Section 16-45-1w5, is shut down for repairs at 50 feet.

In the Lesser Slave Lave area, northern Alberta, International Oils, Inc., of New York, Section 14-74-4w5, has been cased to 1,100 feet, after getting shows of gas and oil at 1,070 feet and about 200,000 feet of gas at 1,090 feet. Trevor W. Starkey, chief geologist for the company, recently visited the well, and a party of directors of the company, headed by President Frank R. Ross of New York, are now in Alberta looking over the situation, and making plans for future development. The party includes Frank D. Craig of New York, Harry J. Porter of Canton, Ohio; J. B. Arnolt of Duluth, and C. A. Grant and W. N. Albee of Detroit.

In the Peace River Field, Western Provinces Oil Co. of Saskatoon has resumed work on Victory No. 1 well, Section 31-83-21w5, close to Peace River town. Vance Forcade of Tulsa, Okla., is in charge. The test is down 1,553 feet and work has been held up by a heavy water and gas flow. The 10-inch casing has been carried to 1,532 feet and will be cemented to shut off the water, so that a production test can be made of the green oil showings just above the water horizon. At last reports the gas and water had been got under control.

Field work for the Hudson's Bay-Maryland Corp. in the Canadian West will be directed from Edmonton, where offices have been opened under the direction of Glen Ruby. Preliminary work for the season has been practically concluded and the geologists are compiling their reports and co-relating data from various other sources.

In Saskatchewan, Unity Valley Oil Co. No. 1, SE Section 23-41-24w3, is down 2,000 feet and drilling with a double shift. The next possible production horizon is indicated around 2,600 feet depth. Paragon Development Co. is being organized with $250,000 capitalization and head office at Winnipeg to drill on Saskatchewan acreage, in the same general area.

In the Ontario Fields, Union Natural Gas Co. No. 13, Dawn Township, Lambton County, has been held up owing to bad roads. The same conditions have prevented a start on Union Natural Gas Co. No. 260 on the Truckenbrod farm near Port Alma, in the southern part of the Tilbury Field, Kent County.

Alberta Operators Organize

At a meeting held recently at Calgary and attended by representatives of nearly a score of oil companies, the Alberta Oil Operators Association was organized with the following officers: President, W. E. McLeod, McLeod Oil Co.; vice president, W. S. Herron, Okalta Oils, Ltd.; secretary, S. G. Baggs, Dolomite Oils, Ltd.; treasurer, A. G. Spooner, Vulcan Oils, Ltd. The executive includes W. E. McLeod, George H. Cloakey, Sr., J. E. McLeod, W. S. Herron, A. G. Spooner, A. Owen Jennings, J. C. Dallas.

One of the most important questions to be dealt with will be the opening of a central information bureau for the service of the investing public, the purpose being to furnish accurate information regarding financial status of companies and the prospects or actual production of wells. The matter of improving the roads between Okotoks and the Turner Valley Field will be taken up with the Alberta Government.

Discussing the plans of the organization, J. C. Dallas, one of the prime movers, stated that all oil companies in good standing, whether drilling or refining, were eligible for membership. He added:

"We consider that we can do a great deal of good as a co-operative body. We can make an intensive study of marketing conditions, of prices for our products, of transportation problems both by rail and road. As a firm organization embracing most of the oil companies in the province, we can safeguard the companies from unfair legislation and the stockholders from dishonest practices. There are practically no limits to the usefulness of the organization, and we intend to make it of the greatest possible value as soon as possible."

LOUISIANA-ARKANSAS

(Continued from Page 57)

Robertshaw, Section 12-21-15, is a derrick; No. 81 is a rig, and No. 10 Slattery, Section 27-21-15, is drilling at 3,061 feet. Gilliam Syndicate's No. 1 Sellington, Section 17 21-14, is being bailed to test at 1,650 feet. Golden Flood Oil Co.'s No. 2 Atkins, Section 31-21-15, is drilling at 1,290 feet.

On the Gulf company's Ferry Lake lease, No. 252 is drilling broken sand at 2,253 feet; No. 255 is waiting for a standard rig at 2,270 feet; No. 256 blew in making 10,000,000 feet of gas and 500 bbls. of salt water from 2,255 feet. Arrangements are being made to plug back to 2,235 feet; No. 257 is waiting for a standard rig at 2,300 feet; No. 258 is drilling at 135 feet; No. 259 is a derrick. Howard and associates' No. 1 Pyron, Section 15-21-15, is drilling at 000 feet. Magnolia Petroleum Co.'s No. 16 Dillon, Section 24-21-15, is drilling at 3,672 feet; No. 17 is drilling lime and shale at 3,644 feet. A rig is up for Magnolia company's No. 25 D. H. Raines, 560 feet west and 150 feet south NE

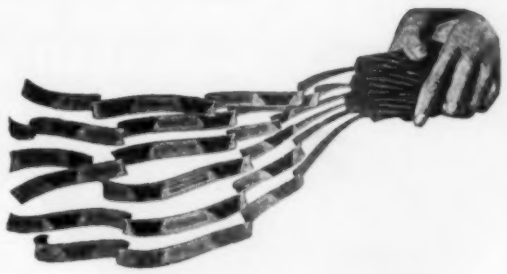
Why take any chances on getting the Wrong grade of wire lines?

Williamsport can protect you against this. It may save you hundreds of dollars. Costs you nothing extra to get it.

When you want a wire line—you want it quick. But that isn't all. You want the GRADE you ask for.

How do you know that you get it?

The tag on the rope or the mark on a reel is uncertain evidence. Williamsport wire lines contain a patented "Telfax" tape throughout the center of the hemp core, **BUILT IN** at the plant, it shows the grade in PLAIN ENGLISH—no matter how often the line changes reels—factory evidence of its grade CANNOT be removed.



This protection may sometime prove more valuable to you than the entire cost of the line. Why take chances on the grade of unmarked lines?

A "Williamsport" warehouse is near you.

Williamsport Wire Rope Company

Main Office and Works: Williamsport, Pa.

General Sales Offices:
122 S. Michigan Ave., Chicago, Ill.

Oil Country Sales Offices:
Williamsport Bldg., 4th and Midland Valley Tracks, Tulsa, Okla.

Distributors

Houston Mildred Shidler Blackwell Ardmore Holdenville Bristow Wichita Falls Bartlesville
Smackover Arkansas City Cromwell Shreveport Casper Lewistown Electra

REED ROTARY DRILLING TOOLS

Back of Every Single

Reed Rotary Tool

out in the fields of the world, stand men whose one thought and high ambition are that those tools shall give results that satisfy

Reed Roller Bit Company

HOUSTON LOS ANGELES

cor. Section 22-21-15. Six-inch casing was cemented at 2,180 feet at Magnolia company's No. 1 Wemple, Section 14-20-15, and No. 1 Wiley Bradford, Section 24-21-15, is drilling lime at 3,988 feet. Morris Drilling Co.'s No. 2 Pala fee, Section 1-20-16, is being bailed to test at 1,610 feet. Casing set at 2,258 feet is being bailed at Murphy and associates' No. 1 Youree, Section 13-20-15.

Ohio Oil Co.'s No. 3 Murray, Section 28-21-15, is a rig, and No. 1 Caddo Levee Board, 330 feet north and east C, Section 28-23-16, a derrick. Owl Oil Co.'s No. 1 Bryson, Section 9-17-16, was temporarily abandoned at 2,824 feet; No. 1 Hammock, Section 34-18-16, is being rigged, and No. 1 Wilburn, Section 4-17-16, is drilling at 2,476 feet. Radio Oil Co.'s No. 3 Leonard, Section 31-21-15, is waiting for a standard rig at 1,506 feet. Ramsey and associates' No. 1 Powell, Section 36-22-16, is waiting for a standard rig at 1,040 feet; No. 2 Powell is drilling at 950 feet.

On The Texas Company's Caddo leases, No. 65 Caddo Levee Board, Section 33-21-16, is drilling at 900 feet; No. 1-B Caddo Levee Board, Section 22-15-12, was dry at 1,185 feet and is to be abandoned. Arrangements are being made to reset 4½-inch casing at 3,825 feet at No. 42 C. M. L. Co., Section 23-21-15; No. 55 Harrell, Section 4-21-16, is drilling at 900 feet; six-inch casing was cemented at 1,418 feet at No. 7 Herndon, Section 14-21-15; a derrick is being built for No. 12 Russell, Section 3-20-16. Tholl Oil Co.'s No. 1 Allday, Section 31-21-15, is being rigged. Thomason and associates' No. 2 Muslow fee, Section 31-21-15, is waiting for a standard rig at 1,565 feet, and No. 3 is being swabbed to test at 1,695 feet. Unity Petroleum Co.'s No. 1 Crystal fee, Section 13-21-16, is waiting for a standard rig at 1,055 feet, and No. 3 is waiting for a standard rig at the same depth. Eight-inch casing was cemented at 1,005 feet at Unity company's No. 6 Crystal fee, Section 14-21-16, and at 1,015 feet at No. 7 Victor Wenzell's No. 2 Hunsicker, Section 15-20-16, is being swabbed to test 11 feet of sand topped at 2,194 feet, and No. 3 is being rigged. Wenzell's No. 2 Wemple, Section 14-20-15, is drilling at 1,500 feet.

Monroe District

The only completion in the Monroe district last week was Central company's No. 2 Kerr, Section 12-19-4e, which was completed for a 500,000-foot gas well at 2,182 feet. Natural Gas Products Co.'s No. 1 School board, 1,320 feet south and 1,980 feet west NE cor. Section 18-19-3w, is a rig. United Carbon Co.'s No. 1 Clarke, Section 26-20-5e, is being bailed to test at 2,279 feet. Gulf Refining Co.'s No. 1 West Virginia, Section 17-17-5e, is drilling at 1,470 feet. Hatcher and Evans' No. 5 fee, Section 17-19-4e, is drilling at 1,500 feet. Ladell and associates' No. 35 fee, Section 1-19-4e, is being rigged. Eight-inch casing was cemented at 840 feet at Maurey Drilling Co.'s No. 2 Frierson, Section 20-19-4e.

Six-inch casing was cemented at 2,140 feet at Ouachita Gas Co.'s No. 7 Allison, Section 37-21-4e, and No. 2 d'Arbone, Section 25-19-2e, is being cored at 2,362 feet. Palmer Corp.'s No. 4 Cole, Section 7-19-4e, is drilling at 2,000 feet. Ten-inch casing was cemented at 350 feet at United Carbon Co.'s No. 1 Patton, Section 10-20-4e. O. M. Gresham's No. 1 Peak, 3,960 feet south and 1,320 feet west NE cor., Section 5-20-4e, is a rig. Same operator's No. 1 Williams, 660 feet south and 2,640 feet west, NE cor., Section 6-20-4e, is a rig. Gulf Refining Co.'s No. 1 Lizzie Nelson, Section 5-19-1e, is drilling gray sandy shale at 2,770 feet. Operations are being delayed at United Carbon Co.'s No. 1 White, Section 32-21-4e, by a fishing job at 186 feet.

Webster Parish

Two deep gas wells in Cotton Valley, neither sensational in production but both rich in gasoline content, were completed during the past week. The largest was Humble Oil & Refining Co.'s No. 2 Cox, Section 22-21-10, which was completed at 4,398 feet, making 5,000,000 feet of gas. The other was R. W. Norton's No. 1 Josey and Massey, Section 27-21-10, good for 3,000,000 feet of gas at 4,397 feet.

Magnolia company's No. 4 Tiner, Section 21-21-10, is shut down at 325 feet waiting for 10-inch casing. Six-inch casing was cemented at 2,539 feet at Magnolia company's No. 3-A Turner, Section 21-21-10. Ohio Oil Co.'s No. 4 Bank of Cotton Valley, Section 22-21-10, is drilling lime at 3,169 feet. Smitherman and McDonald's No. 1 Oakley, Section 29-23-11, is drilling lime at 4,907 feet. Southern Crude Oil Purchasing Co.'s No. 1 Munn, Section 1-22-10, is fishing for the drill stem at 4,520 feet, total depth, 4,620 feet.

Winn Parish

No completions for the Urania Field on the Winn Parish side were recorded last week. Allen and associates' No. 2 Allen, Section 23-10-1e, has 6 feet of sand at 1,507-13 feet and is waiting for a standard rig. Keen & Woolf's No. 3 Tisdale, 150 feet south and east NW cor. E half NW NW, Section 26-10-1e, is a derrick. F. A. Schuman's No. 1 Albritton, Section 27-10-1e, is drilling at 250 feet.

LaSalle Parish

Seven new wells during the past week gave the Urania Field 1,325 bbls. of new production. Biggest of the completions was Oil Operators Trust's No. 6 Urania, Section 7-10-2e, which is flowing 600 bbls. of clean oil from 4 feet of sand at 1,518-22 feet. The well is in the north end of the pool. Vieing with that completion is H. L. Hunt's No. 2 Urania, Section 2-9-1e, in the southern end of the field. It is making 500 bbls., 6 per cent salt water, from 12 feet of sand topped at 1,499 feet. H. L. Hunt's No. 4 Griswold, Section 2-9-1e, is making 100 bbls. on the pump, 50 per cent salt water, from sand at 1,501-04 feet. Catalina Oil Co.'s No. 2 Urania, Section 8-10-2e, is flowing 50 bbls. of oil from sand at 1,533-39 feet. Keen & Woolf's No. 2 Griswold, Section 3-9-1e, is making 30 bbls. on the pump from sand at 1,504-08 feet. Natural Gas & Fuel Corp.'s No. 5-M Urania, Section 20-10-2e, was completed for a 20-bbl. pumper in sand at 1,580-88 feet. This well blew in several weeks ago making 15,000,000 feet of gas and spraying oil. Natural Gas Co.'s No. 8-M Urania, Section 20-10-2e, was dry and abandoned at 1,589 feet. Because of a bad hole, Pima Petroleum Co. abandoned No. 8-B Urania, Section 7-10-2e, at 1,531 feet. Sherman and associates moved the rig and abandoned No. 4 Russell, Section 25-10-1e, at 101 feet. Shreveport Oil Corp.'s No. 3 Pendarvis, Section 26-10-1e, is flowing 25 bbls. of fluid, 20 per cent water, from sand at 1,512-16 feet.

O. W. Clark's No. 3 Miles, Section 25-10-1e, is being rigged, as is No. 6 Tullos, Section 23-10-1e. Chal Daniels' No. 1 Urania, Section 2-9-1e, is flowing 10,000 bbls. of salt water and making 3,000,00 feet of gas from 4 feet of sand at 1,491-95 feet. Hartanzo Oil Co.'s No. 3 Urania, Section 7-10-2e, is drilling at 1,140 feet. Keen & Woolf's No. 3 Griswold, Section 3-9-1e, is drilling lime rock at 1,801 feet. McGaha and associates' No. 1 Urania, Section 5-10-2e, is shut down at 1,542 feet waiting for water. Six-inch casing was cemented at 1,486 feet at Montague Oil Co.'s No. 5 Zenoria, 650 feet south and east NW cor. Section 11-9-1e. Natural Gas & Fuel Corp.'s No. 5 Tullos, Section 26-10-1e, has 500 feet of oil in the hole from 8 feet of sand at 1,490-98 feet. Six-inch casing was cemented at 1,563 feet at Natural Gas Co.'s No. 7-M Urania, Section 20-10-2e.

A derrick is up for Oil Operators Trust's No. 7 Urania, 600 feet south and 50 feet east NW cor. SE SE, Section 7-10-2e. Joyce Richardson's No. 1 Hatfield, 50 feet north and west SE cor. NW NE, Section 7-10-2e, is a derrick. Rowe and associates' No. 1 Hatfield, 480 feet west and 150 feet north SE cor. NW NE, Section 7-10-2e, is a rig. Shreveport Oil Corp.'s No. 3 Pendarvis, Section 26-10-1e, is drilling at 750 feet. Six-inch casing was cemented at 1,511 feet at O. F. Whitaker's No. 6 King, Section 36-10-1e. Wooten and associates' No. 2 King, Section 36-10-1e, is drilling at 50 feet.

Maloneys Will Save You MONEY!

The product lowest in first cost is seldom economical. Maloneys ARE economical because they give *added years of service.*

Made of Keystone Copper Steel, the most highly rust-resisting steel known, our methods of reinforcing seams give exceptional strength. Maloney users will tell you that Maloneys save money in the long run.

Exclusive, patented "crimp" at seams and joints. Cleaning-out plates flush with bottoms. Highest grade valve and thief-hatch equipment.

"Alone in Quality"

MALONEY TANK MFG. COMPANY
Tulsa, Okla.

Distributors at All Principal Petroleum Points

Sizes: 12 to 3,000 Barrels

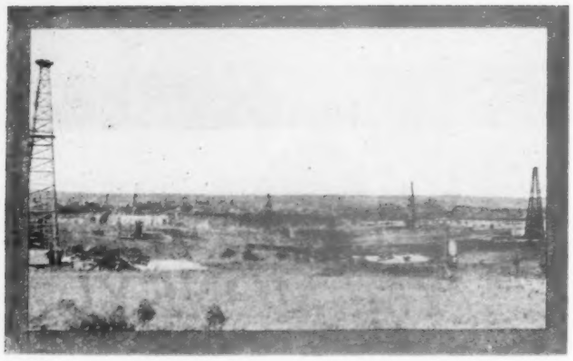
Packed in Steel-Bound Crates for Export

Howell Aluminum "3 in 1" Vacuum Pressure Valve and Thief Hatch—the BEST and LATEST Deck Equipment—POSITIVE Safety.

MADE OF KEYSTONE COPPER STEEL — MALONEY PATENTED BOLTED COPPER-STEEL TANKS — MADE OF KEYSTONE COPPER STEEL

MALONEY
ALONE

Drilling Deep Wells



AJAX Snap Shots

THREE OUT OF FOUR
AJAX DRILLED

Ajax snapshots the Wewoka Oil Field. Seventy-five per cent at least of the wells in the picture were drilled by Ajax single and Ideal-Ajax twin engines. One model engine alone, the Ideal-Ajax 12x12 Twin was drilling seven out of twenty-two wells being drilled at one time by the Magnolia Petroleum Company.

The number of feet per day that you can drill with your crew and equipment is the controlling factor in the cost of completing a well.

If you operate a rotary rig, consider the effect of using the Ideal-Ajax Twin Engine as your power plant.

The new 12x12 gives more power, smoother operation, greater results from the engine with less wear and tear either on the engine or the other equipment. You can reach and maintain a higher speed.

The Ideal-Ajax Twin is the engine with the *Enclosed Crankcase.* Splash lubrication reaches all important wearing parts.

Made by

AJAX IRON WORKS
Corry, Pa.

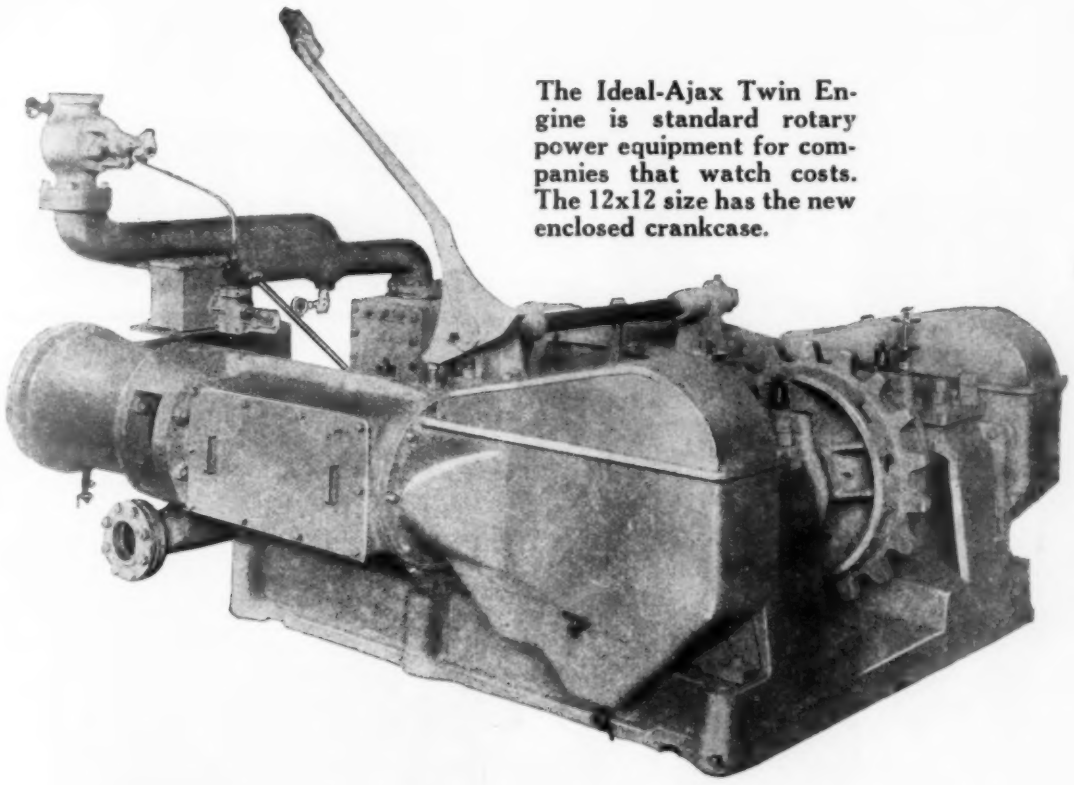
DISTRIBUTED BY
THE NATIONAL SUPPLY COMPANIES

In every oil field

AJAX-
DRILLING

At Lower Cost——

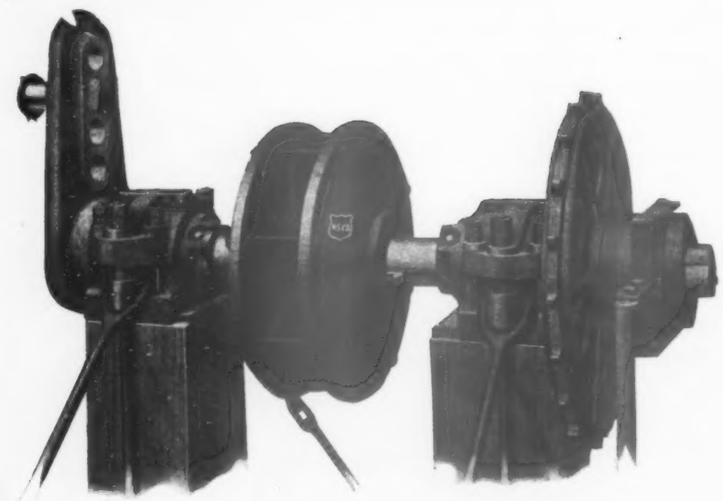
AJAX ENGINES

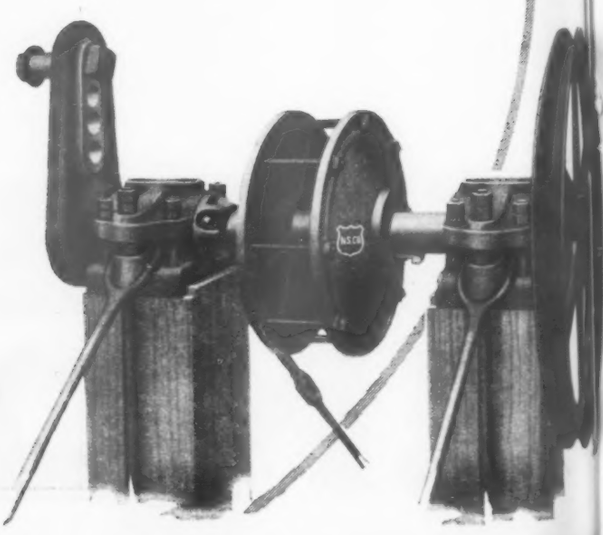


The Ideal-Ajax Twin Engine is standard rotary power equipment for companies that watch costs. The 12x12 size has the new enclosed crankcase.

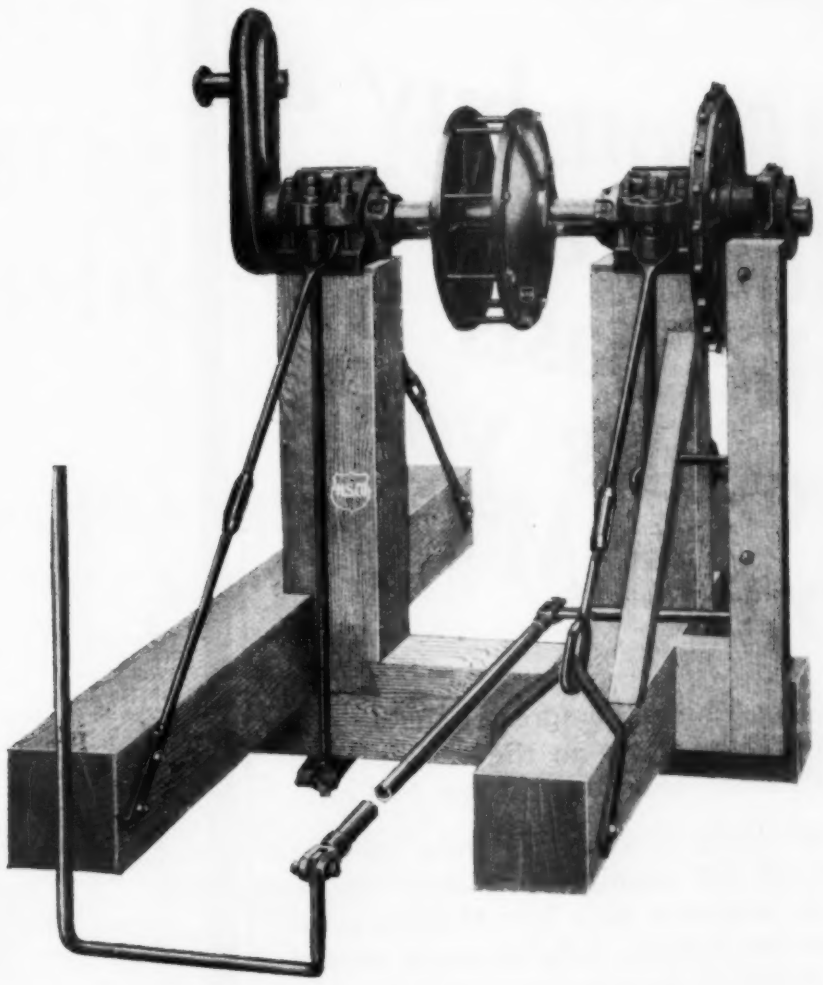
STEAM ENGINES

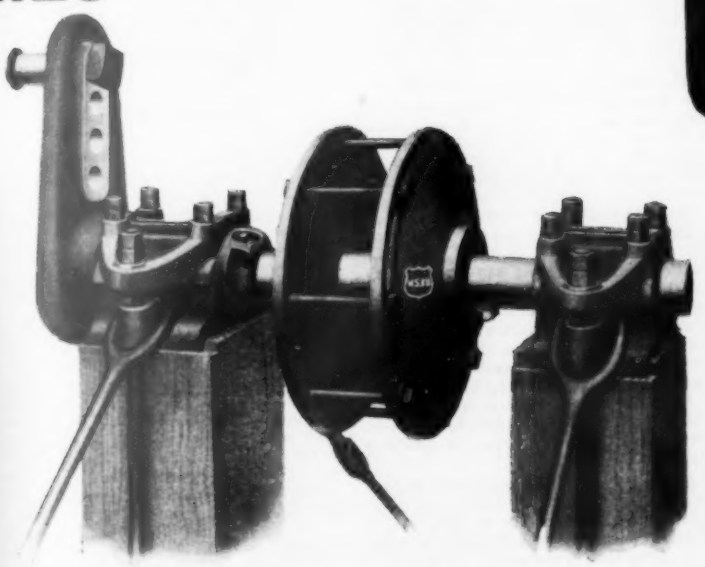
NATIO
STAN
RIG I
NATIONA
COM

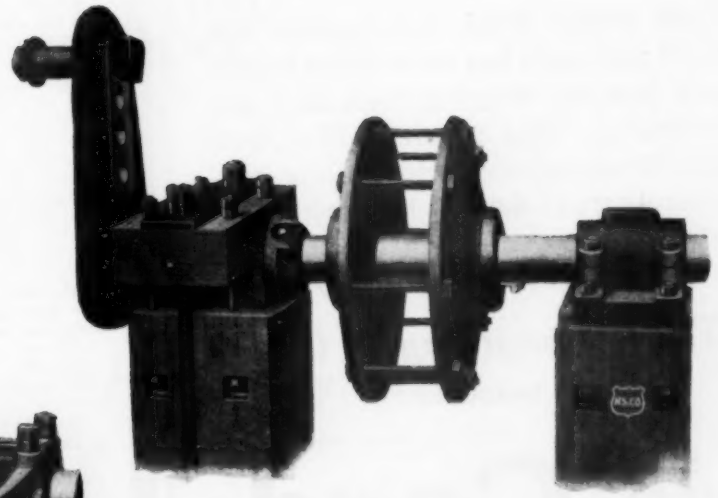




TIONAL
ANDARD
IRONS
THE
NAL SUPPLY
COMPANIES







If you buy a lubricator on the basis of results you'll buy a McCord

Buy gas engine, compressor and drilling outfit lubricators on the basis of performance—and you will buy McCords.

The ability to stand up under oil field service and supply dependable lubrication, service is built into McCord force feed lubricators. Lubricators in service 7, 10 and 15 years in the oil fields prove it.

McCord Force Feed Lubricators use fresh oil and use it but once. Oil is forced to each bearing, keeping them cool and free-running. The result — McCord equipped compressors and drilling outfits operate more days at less cost.

Distributed in the oil fields by

The National Supply Co.

ALL BRANCHES

McCord
force feed
Lubricators
Standard of the Oil fields

McCORD RADIATOR & MFG. CO., Detroit
Lubricator Division

GULF COAST FIELDS

(Continued from Page 61)

bbl. well in No. 20 Barngrover at 3,200 feet. The Gulf Production Co.'s No. 5 Phoenix, a workover, is pumping 160 bbls. at 3,300 feet, 16 per cent water. No. 62 Phoenix will be abandoned at 3,400 feet.

The Republic-Houston Oil's joint No. 137 Dolbear is drilling at 2,980, and No. 138 Dolbear is at 3,980 feet. Locations have been made for Nos. 140 and 141. The Gulf Production Co.'s No. 73 Phoenix is drilling around 3,600 feet and No. 76 at 435 feet, with locations made for Nos. 75 and 77. No. 18 Hannah is at 4,500 feet, and No. 19 is below 3,000 feet. The Humble Oil & Refining Co.'s No. 1 Lynd will be deepened, as will No. 4 Hooks-Spell. The Texas Company's No. 1 Armlin is at 3,365 feet. The Texas-Vacuum Oil Co.'s No. 6 Hannah is at 2,655 feet. The Empire Gas & Fuel Co.'s No. 22 Barngrover is at 1,323 feet. The Hull Oil Co.'s No. 11 Abel is at 2,270 feet. The Mecom Oil Co.'s No. 1 Seale is below 3,000 feet.

In the South Liberty Pool, the Humble Oil & Refining Co.'s No. 3 Welder, in the west extension, is around 3,760 feet. No. 4 Welder is at 3,521 feet, with casing set ready to drill in. The Gulf Production Co.'s No. 1 Beckman is at 3,600 feet.

In the Orange Pool, the Humble Oil & Refining Co.'s No. 2 Winifree is pumping 100 bbls. at 3,595 feet. The Gulf Production Co. abandoned No. 1 McGuire at 3,450 feet.

The Brownie Babbittee Oil Co.'s No. 7 McLean is drilling around 2,434 feet. The Rex Petroleum Co. is deepening No. 2 Carbello from 3,500 feet. The Humble Oil & Refining Co.'s No. 4 Winifree will be deepened, and No. 10 is drilling at 2,765 feet. The Rycade Petroleum Co.'s No. 1-S State land is at 3,925 feet. The Texhoma Oil Co.'s No. 9 Chesson is at 4,785 feet. The Orange Petroleum Co.'s No. 7 Chesson is around 3,125 feet.

Other Pools

In the Batson Pool, the East Batson Oil Co.'s No. 1 Counzeman is only a 6 bbl. well at 800 feet. The Ada Belle Oil Co.'s No. 110 Fee is making 60 bbls. at 1,150 feet, and the Gulf Production Co.'s No. 63 Choate is pumping 125 bbls. of fluid, 5 per cent oil, at 1,025 feet.

The Gulf Production Co.'s No. 1 Cruse, on the southwest side, is drilling at 3,100 feet. The Kirby Oil Co.'s No. 4 Hughes, on the north side, is deepening at 4,110 feet. The Sterling Oil Co.'s No. 5 Hooks is at 986 feet. The Acorn Oil Co.'s No. 61 Paraffine is around 900 feet. S. R. Buchanan's No. 91 Milhome is at 1,655 feet. The Paraffine Oil Co.'s No. 68 Paraffine is at 975 feet. The East Batson Oil Co. has a location for No. 14 State land.

The Rio Bravo Oil Co.'s No. 46-C in the Saratoga Pool is drilling at 1,190 feet.

In the Goose Creek Pool, the Gulf Coast Oil Co.'s No. 14 Galliard is making 100 bbls. after working over at 2,775 feet.

The Humble Oil & Refining Co.'s No. 4 Myers there is drilling at 2,235 feet. No. 17 Peninsula is at 1,145 feet. No. 32 Peninsula is around 345 feet. No. 31 Smith is deepening. No. 68 Smith is drilling at 4,455 feet. The Humble company is doing more work at Goose Creek than in any of the pools. The Gulf Production Co.'s No. 6 Hirsch, in the bay waters, is drilling below 5,148 feet. Keen & Wolf's No. 9 Schilling is at 2,765 feet. The M. & B. Oil Co.'s No. 5 Scoorgea, northwest of production, is drilling around 2,400 feet.

At Blue Ridge, the Humphreys Corp.'s No. 1 West-Schenck is drilling at 1,786 feet. J. S. Abercrombie & Co.'s No. 2 West-Schenck is flowing 700 bbls. at 3,290 feet. The Gulf Production Co.'s No. 7 West-Schenck is at 560 feet. These are on the south side of the dome. On the east, the Sinclair Oil & Gas Co.'s No. 2 Davidson is at 3,875 feet. The Gulf company's No. 9 Luscher is around 3,190 feet. A location has been made for No. 8 Blakely. On the west side, the Navarro Oil Co.'s No. 1 Robinson is at 985 feet, and the Texhoma Oil Co.'s No. 2 Booth is sidetracking at 3,000 feet.

At West Columbia, The Texas Company's No. 72 Abrahms is at 2,100 feet, and No. 82 Hogg is drilling around 3,010 feet, both on the north flank of the dome. The Hyde Production Co.'s No. 2 Masterson, on the northeast flank, is around 2,545 feet.

At High Island, the Sun Oil Co.'s No. 8-C Cade is at 4,800 feet, with 6⅝-inch casing set. No. 11 Cade is below 2,870 feet, and No. 10 Lockhart is around 1,355 feet. The Island Oil Co.'s No. 1 McCarthy is at 2,275 feet.

The Texas Company's No. 1 Farmer, on the northeast flank of the Boling Dome, is coring sand at 4,175 feet in No. 1 Farmer. The Sun Oil Co.'s No. 1 Farmer is drilling around 1,965 feet in cap rock. The Texas Company's No. 2 Felder, on the northwest side, is drilling below 4,100 feet in shale and lime.

In the Humble Pool, Benedum & Trees' No. 1 Hirsch, northwest of production, is drilling around 2,613 feet. Martin & Drake's No. 1 Wilson has been spudded in, and Marsailes Brothers' No. 9 Strange is drilling.

The Gulf Production Co. abandoned No. 17 Davis at Long Point, Fort Bend County, at 1,020 feet in cap rock. No. 15 Davis there is drilling around 3,360 feet. No. 18 is a location. The Gulf company is drilling No. 35 at Big Creek and starting No. 12 Wheat.

Brazoria County: Clemens Dome, Roxana Petroleum Corp.'s No. 1 Pabst drilling at 1,570 feet; No. 3 Clemens drilling at 2,716 feet. Allen Dome, Roxana Petroleum Corp.'s No. 3 Allen drilling around 3,040 feet; No. 2 Bernard drilling around 300 feet. Rattlesnake Mound, The Texas Company's No. 1 drilling around 800 feet.

Chambers County: Osage Oil Co.'s No. 1, south of Moss Bluff, drilling at 2,800 feet. Pattillo Higgins' No. 1 fee, southeast of Barber Hill, drilling below 900 feet. Sun Oil Co.'s No. 1 Moss Bluff drilling below 1,200 feet.

Jefferson County: T. D. Brooks' No. 1, located 5 miles south of Spindletop, drilling around 1,700 feet; Port Arthur Development Co.'s No. 4 West, drilling at 1,780 feet.

Matagorda County: Gulf Production Co.'s No. 1 Parkinson, Hawkins Dome, drilling at 4,310 feet. No. 8 Craig starting.

Harris County: Brain and others' No. 1, north of Spring, drilling around 670 feet.

Orange County: Orange parties drilling on Adams land, gas blowout.

Wharton County: J. W. Rich and Humphreys Corp.'s No. 1 Malone, 5 miles west of Wharton, shut down temporarily at 1,840 feet.

KANSAS FIELDS

(Continued from Page 50)

Co.'s No. 1 Davis, NE cor. SE SE, Section 2-24-10, is dry and abandoned at 2,235 feet. Ward-McGinnis' No. 2 E Wiggins, NE cor. SW NW, Section 30-24-11E, sand 1,825-50 feet, shot with 100 quarts made 200 bbls. Pure Oil Co.'s No. 6 Oliver, SE cor. NE SE, Section 8-23-11, had sand 1,946-94 feet, shot with 240 quarts, made 40 bbls. The Texas Company's No. 2 Fogel, SW cor. NW NW, Section 16-23-11E, sand 1,917-2,005 feet, shot with 180 quarts, made 50 bbls. Tidal Oil Co.'s No. 10 Shadel, SW cor. NW SE, Section 15-23-13E, sand 1,777-1,825 feet, shot with 80 quarts, made 45 bbls. Manhattan Oil Co.'s No. 2 Sheppard, NE cor. SW SE, Section 2-22-10E, sand 2,046-76 feet, shot with 200 quarts, made 200 bbls. Phillips Petroleum Co.'s No. 3 Green, NW cor. NE NW, Section 11-22-10E, sand 2,080-2,140 feet, shot with 120 quarts, made 80 bbls. Phillips-Ritchey-Moore's No. 1 Owens, NE cor. NW NE, Section 11-22-10E, sand 2,107-51 feet, shot with 140 quarts, made 75 bbls. Empire Gas & Fuel Co.'s No. 7 Duby, SW cor., Section 14-22-11E, sand 1,879-1,909 feet, made 30 bbls. oil and 5

MAGNOLIA PETROLEUM COMPANY

Refiners and Marketers of High Grade
PETROLEUM PRODUCTS

Magnolene
REG. U.S. PAT. OFFICE

THE DEPENDABLE LUBRICANT

Lubricating Oils and Greases

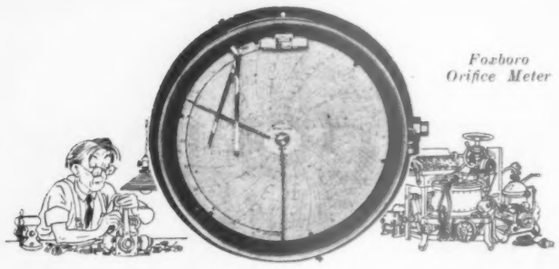
"A Grade for Each Condition"

GENERAL OFFICE

DALLAS, TEXAS

DIVISION SALES OFFICES:

DALLAS HOUSTON FORT WORTH SAN ANTONIO OKLAHOMA CITY LITTLE ROCK
EL PASO AMARILLO



Foxboro Orifice Meter

Simplicity Is Efficiency

THE patent office is full of the impractical dreams of long-haired inventors. For every successful machine in use today there are scores of complicated models which could not stand the acid test of service.

Simplicity marks the winners.

Take the actuating movement of a Foxboro Recording Instrument. Here is strength with the least weight and smallest number of moving parts. Excess friction, lost motion, inertia and momentum have been eliminated.

It is the simplest, most accurate, trouble-proof actuating movement ever developed.

Or the Round Form Case introduced seventeen years ago. The Suspended Pen Arm. The Three-Point Support Clock Movement. The friction-type, accurately centered Chart-Holder. Each the simplest, most efficient design possible.

These features have made the Foxboro Orifice Meter the standard instrument for the measurement of casinghead and natural gas throughout the oil and gas industry. They make it possible to guarantee every Foxboro Instrument to be permanent in calibration and accurate to within less than 1 per cent of total scale range. Write for Bulletins.

The Foxboro Company, Inc.

Neponset Avenue, Foxboro, Mass., U. S. A.

205 So. Cheyenne Avenue, Tulsa, Okla.

New York Chicago Boston Philadelphia Pittsburgh Cleveland Rochester Atlanta Los Angeles San Francisco Portland, Ore.

FOXBORO

Reg. U. S. Pat. Off.

THE COMPASS OF INDUSTRY

bbls. of water. Same company's No. 13 Fromm, SE cor. NW, Section 14-22-11E, had sand 1,865-95 feet, shot with 60 quarts, made 115 bbls. The Texas Company's No. 3 Fankhouser, SE cor. NW NE, Section 4-22-12E, dry and abandoned at 1,910 feet.

Greenwood County New Work

Bason and other's No. 1 McCartey, SW cor. NW, Section 27-25-10, is a rig. Bisango and others are moving in machine for No. 1 Steckel, NE cor. NW, Section 6-25-13E. Phillips Petroleum Co.'s No. 5 Nicon, SW cor. SE SE, Section 25-24-10E, is a rig. Manhattan and McGinnis' No. 1 Mock, NE cor. NW NE, Section 36-24-10, is a rig. Ward-McGinnis' No. 3 Mock, NW cor. NE NE, Section 36-24-10, a rig. Kansas Oil Co.'s No. 4 Freeman, NE cor. SW, Section 6-24-11E, drilling at 300 feet. Paulhamus & Smith's No. 2 Smith, NW cor. SW SW, Section 8-24-11E, is a rig. Robertson and Dugan are spudding No. 1 Dugan, SW cor. NW NW, Section 20-24-11E. W. H. Swartz is spudding No. 1 Brown, NE cor. SW, Section 36-23-10E. Fisher and Lock's No. 1 Seeley, NE cor. NW, Section 6-23-11E, is a rig. Amerada and Simmon's No. 4 Ellis, NE cor. NW SW, Section 26-23-11E, is a rig. Theta Oil Co. is spudding No. 24 Schneider, CNL NW NW, Section 10-23-13E, Prairie Oil & Gas Co.'s No. 1 Newman, NW cor. SE SW, Section 32-23-13E, is a rig. Katoma Oil Co. is spudding No. 1 Rediker, SE cor., Sectoin 34-23-13E. Rhodes and Able's No. 7 Browning, SW cor. NE SE, Section 18-22-10E, is drilling at 300 feet. Hazlett and others' No. 9 De Malorie, SE cor. SW SW, Section 7-22-11E, is drilling at 600 feet. Empire Gas & Fuel Co.'s No. 16 Kipfer, NW cor. SE, Section 11-22-11E, is a rig. Same company's No. 14 Fromm, NE cor. SW NE, Section 14-22-11E, is a rig. York State Oil Co.'s No. 16-B De Malorie, NE cor. NW SW, Section 32-22-11E, is drilling at 490 feet. Simmons and others' No. 11-B Frankhouser, NW cor. NE SE, Section 4-22-12E, is drilling at 350 feet. T. K. Simmons and others' No. 6 Holderman, SW cor. NE NE, Section 9-22-12E, is a rig and No. 8, SE cor. NE NE, same section, is spudding. Skelly Oil Co.'s No. 1 Tood, NE cor. SE, Section 9-22-13E, is a machine. Braden Brothers Co.'s No. 1 Wagler, SE cor. SW SE, Section 22-22-13E, is drilling at 750 feet.

Lyon County Completions

Theta Oil Co.'s No. 4 Jones, NE cor. SW NW, Section 30-21-10E, had sand 2,207-62 feet, shot with 140 quarts, made 100 bbls. Gashe and Amerada's No. 1 Michaels, SW cor. SE, Section 36-21-12E, dry and abandoned at 1,962 feet.

Lyon County New Work

McCullough and Independent Oil & Gas Co.'s No. 1 Bradfield, NW cor. SE, Section 25-21-10E, is a rig. McCullough and Independent's No. 1 Bradfield, SE cor. NE NW, Section 25-21-10E, is a rig. Ritchey and Moore's No. 1 Bradfield, NW cor. SW NE, Section 25-21-10E, is a rig.

OKLAHOMA FIELDS

(Continued from Page 53)

20-11, sand at 1,885-98 feet, shot with 40 quarts, made 20 bbls.

Osage County New Work

Phillips Petroleum Co.'s No. 12, SE cor. SE SW, Section 7-27-6, is drilling at 605 feet. Mid-Kansas Oil Co.'s No. 6, NE cor. SE, Section 33-27-6, drilling at 360 feet. Phillips Petroleum Co. is digging cellar for No. 3, SW cor. SE SE, Section 20-26-6. Lewis Oil Co.'s No. 13, NW cor. SE SE, Section 21-26-6, drilling at 350 feet. Gypsy Oil Co.'s No. 1, NE cor. SE, Section 27-25-5, drilling at 100 feet. Prairie Oil & Gas Co.'s No. 14, NW cor. NE NE, Section 21-25-6, is a location. Barnsdall Oil Co.'s No. 1, NE cor. SW, Section 5-24-5, is drilling at 1,280 feet. Skelly Oil Co.'s No. 2, NW cor. SE SW, Section 35-22-8, is drilling at 100 feet. Pioneer Oil Co.'s No. 9, SE cor. NE NW, Section 5-20-11, is drilling at 1,080 feet.

Garfield County Completions

Mid-Continent Petroleum Corp.'s No. 65 Walker, NW cor. SE SW, Section 13-22-4w, top of sand at 3,638 feet, drilled to 3,642 feet, made 150 bbls. naturally. Sinclair Oil & Gas Co.'s No. 32 Walker, NE cor. SW NE, Section 13-22-4w, sand 4,382-85 feet, made 296 bbls. naturally. Same company's No. 21 Belveal, CWL NE NE, Section 24-22-4w, plugged and abandoned at a depth of 2,835 feet. Its No. 16 Crews, NW cor. SW, Section 19-22-3w, sand at 2,160-91 feet, made 60 bbls. naturally.

Garfield County New Work

Sinclair Oil & Gas Co. is rigging up rotary for No. 66 Walker, SW cor. NE NE, and No. 67, NW cor. SE NE, is drilling at 100 feet, Section 13-22-4w. Same company's No. 9 Kessner, NE cor. SE, Section 36-22-4w, is drilling at 305 feet. Its No. 17 Metcher, NW cor. SE NW NE, Section 36-22-4w, is a rig. Its No. 38 Kisner, SW cor. NE NW, Section 19-22-3w, is rigging up standard tools.

Creek County Completions

Gled Oil Co.'s No. 5 Ross, SE cor. NE SW, Section 13-19-8, had sand at 2,138-78 feet, shot with 140 quarts, made 100 bbls. J. B. Grieves' No. 1 Grayson, NW cor. NE, Section 24-19-8, sand at 2,974-95 feet, shot with 20 quarts, made 60 bbls. Riverland Oil Co.'s No. 4 Land, SE cor. NW NW, Section 1-18-11, sand at 2,095-2,102 feet, made 840 bbls. W. J. Cole and others' No. 1 Miller, CSL NE SE, Section 32-18-11, is shut down. Prairie Oil & Gas Co.'s No. 40 Litchfield, SE cor. SE NW NW, Section 22-17-7, sand at 2,948-93 feet, made 38 bbls. naturally. Burke-Greis Oil Co. and Darby's No. 1 Scruggs, NW cor. Section 21-17-8, sand at 3,488-3,504 feet, 420 bbls. naturally. Lima Oil & Gas Co.'s No. 4 Green, NW cor. NE NW, Section 24-17-8, is dry and abandoned at 3,594 feet. O. M. Ireland has a dry hole in No. 1 Smith, NW cor. SE, Section 11-17-10, at a depth of 3,000 feet. Pontiac Oil & Gas Co.'s No. 1 Fulson, CNL NW SW, Section 13-17-10, sand at 1,914-44 feet, shot with 120 quarts, made 30 bbls. Gypsy Oil Co.'s No. 37 Lundy, NE cor. SE, Section 7-17-12, dry and abandoned in the Turkey Mountain sand at 2,563 feet. Love & Myers' No. 1 Hendrickson, NE cor. SE NW, Section 21-16-9, sand at 3,018-20 feet, shot with 10 quarts, made 125 bbls. Thompson & Black's No. 4 Jim Vann, CNL NE NW, Section 10-16-12, sand at 1,635-86 feet, shut in for 5,000,000 feet of gas. Mid-Continent Petroleum Corp.'s No. 2 Harry, SW cor. SE, Section 4-14-10, sand at 3,145-62 feet, shot with 20 quarts, made 110 bbls. M. P. Evans and others' No. 1-A Harjo, SE cor. SW, Section 25-14-10, dry and abandoned at 3,345 feet.

Creek County New Work

Magnolia Petroleum Co. is running 12½-inch casing to 975 feet in No. 2 Jones, C SE NE, Section 35-18-7. Alvard & West's No. 3 Freeman, CEL NE SW, Section 14-17-8, is drilling at 400 feet. Shaffer Oil & Refining Co.'s No. 2 Morrison, SW cor. Section 16-17-8, is a location. J. W. McCullough is spudding No. 1 Drew, SW cor. of Section 1-17-9. Prairie Oil & Gas Co. is rigging up No. 1-B Hope, NE cor. SW SW, Section 3-17-9. J. H. Wright's No. 6 Tahkaney, SW cor. NE NW, Section 24-17-10, is drilling at 1,400 feet. E. Tim Oil Co. is rigging up No. 1 Inman, SW cor. of Section 9-17-11. Misner & Reesman's No. 3 Broadnox, C NW NW NW, Section 16-17-11, is drilling at 1,000 feet. Shaffer Oil & Refining Co.'s No. 1 J. Wa-Co-Che, CEL NE NE, Section 17-17-11, is a rig. Grayhoma Oil & Gas Co.'s No. 1 Vaughn, NE cor. SW NE, Section 32-16-9, is drilling at 2,200 feet. Shaffer Oil & Refining Co.'s No. 1-A Lacy, SE cor. NW NE SE, Section 23-16-11, is a location. Future Oil Co. is rigging up No. 1-A Tom Vowell, NW cor. SW NW, Section 4-16-12. Devonian Oil Co.'s No. 1 John Bigpond, SW cor. NE, Section 36-15-7, is a rig. R. J. Jennings' No. 2 Tiger, SE cor. SW SE, Section 36-15-7, is a rig; Prairie Oil & Gas Co.'s No. 1 Bryden, SW cor. Section 31-15-8, is a rig. C. G. Tibbens is spudding No. 33 Colbert, CSL N half Section 30-15-9. Producers & Refiners Corp.'s No. 3 Hogan, NW cor. SW SW, Section 1-14-8, is a rig. Atlantic Oil Producing Co.'s

Intimate contact with petroleum engineering breeds perfect understanding of what products best will serve.

Two years' study has produced this better Aluminum Paint . . .

Especially adapted for the petroleum field

DU PONT ALUMINUM PAINT, which has been developed as a result of intensive study of the requirements of the Petroleum field by du Pont Service Engineers, is now available in a convenient "Combination Package."

One compartment contains aluminum powder; another holds the vehicle — mix them in half the time that you can *remix* a can of ready-mixed paint that has become settled and "matted."

Hard, tough and elastic, this aluminum paint may be kept in good condition for long periods without loss of brilliance or loss of "leafing" properties.

Durable and quick setting, this finish is especially adapted for use where abrasion must be encountered and where equipment can be released from service only for the shortest possible time.

Available at all du Pont warehouses, including our special station at Tulsa, Okla.

For details and special information, simply address, on your business letterhead: E. I. du Pont de Nemours & Co., Inc., Chemical Products Division, Parlin, N. J., Tulsa, Okla., or Chicago, Ill.

DU PONT

The Sharples Process

THE Standard Oil Company (Indiana) operates at Casper, Wyoming, the largest Sharples dewaxing plant in the world. The capacity of the plant has been increased on two different occasions until today the initial installation (partial view above) has been doubled.

MAX. B MILLER & CO. INC

501 FIFTH AVE., NEW YORK CITY

No. 3 Bear, SW cor. NE NW, Section 16-14-10, is drilling at 320 feet. H. F. Wilcox is spudding No. 3 Dixon, NE cor. SW SE, Section 18-14-10.

Tulsa County Completions

Sand Springs Home's No. 1 Cates, SE cor. NE, Section 4-19-11, is dry and abandoned in the Turkey Mountain sand at 2,254 feet. Its No. 1 Jefferson, SE cor. NE, Section 24-19-11, had sand at 2,269-56 feet, shot with 20 quarts, made 200 bbls. Munn Brothers' No. 1-A Franklin, SW cor. Section 36-19-11, dry and abandoned at 2,320 feet.

Tulsa County New Work

W. E. Holmes is spudding No. 5 Bemore, NW cor. NE NE, Section 18-19-10. Sand Springs Home's No. 2 Jefferson, NE cor. SE NE, Section 23-19-11, is drilling at 510 feet.

Okmulgee County Completions

H. E. Clark has a dry hole in No. 4 Scott, SW cor. SE SW, Section 14-15-14, at a depth of 2,465 feet. Payne-Hyer and others' No. 1-A Frances, SW cor. SE SW, Section 15-15-14, dry and abandoned at 2,288 feet. Custer and others' No. 6 Perryman, NE cor. SE SE, Section 19-15-14, dry and abandoned at 3,950 feet. T. B. Slick's No. 1 Colbert, SW cor. NE SE, Section 14-14-14, sand at 1,697-1,703 feet, shut in for 8,000,000 feet of gas. Radcliffe Oil Co.'s No. 3 Roberts, NW cor. SW, Section 33-13-12, is dry and abandoned at a depth of 3,904 feet.

Okmulgee County New Operations

The Texas Company's No. 11 Bruner, C SW SE, Section 16-15-14, is drilling at 300 feet. Kingwood Oil Co.'s No. 1 Lacy, SW cor. NW SW, Section 7-14-13, an old well drilling deeper, is drilling at 2,173 feet. George Simon's No. 3 Bradford, NE cor. NW SW, Section 19-14-14, is drilling at 300 feet.

Muskogee County New Work

E. L. Kistler is moving in machine for No. 4 Vanderslice, NW cor. SW, Section 29-15-15. E. Price is also moving in machine for No. 4 Morris, SW cor. NW, Section 29-15-15. Culp and others are spudding No. 6 Vanderslice, CEL NE SE, Section 30-15-15. Link Oil Co.'s No. 6 Drew, SE cor. SW SW, Section 31-15-15, is a rig. H. H. Francis has rig on ground for No. 1 McIntosh, CNL NE NW, Section 17-15-17. W. R. Sommerville is spudding No. 1 Lewis, NE cor. NW NE, Section 17-15-17. H. E. Williams is rigging up No. 5 Manuel, NE cor. SW NW, Section 17-15-17.

Seminole County Completions

Independent Oil & Gas Co.'s No. 1 Kidd, C SE NW SE, Section 7-9-8, sand at 3,207-41 feet, shot with 40 quarts, made 125 bbls. Indian Territory Illuminating Oil Co.'s No. 1 Goforth, C SE SW NE, Section 15-8-6, sand at 2,432-36 feet, shut in for 36,000,000 feet of gas. T. B. Slick has abandoned No. 4 Jackson, C NW NE SW, Section 14-8-7. Magnolia Petroleum Co.'s No. 3 Hanning, C NE NE NW, Section 23-8-7, drilled to 3,266 feet, plugged back to sand at 3,177-85 feet, made 51 bbls.

Seminole County New Work

Prairie Oil & Gas Co.'s No. 1 Spencer, SW cor. SE, Section 13-9-6, drilling at 100 feet. Carter Oil Co.'s No. 2 Killingsworth, SE cor. SW, Section 14-9-6, drilling at 38 feet. Same company's No. 2 Grisso, SW cor. SE SW, is drilling at 521 feet and No. 3, NE cor. SW, at 60 feet in Section 23-9-6. Independent Oil & Gas Co. is spudding No. 1 Fixico, SW cor. Section 23-9-6, and rigging up No. 2, SW cor., same section. Indian Territory Illuminating Oil Co. is spudding No. 1 Goodin, NE cor., Section 23-9-6. Its No. 2 Harjo, NE cor. SE SE, Section 23-9-6, is drilling at 58 feet, and No. 4, SW cor. SE SE, ns drilling at 145 feet. Sinclair and Transcontinental Oil Co.'s No. 1 Fixico, SE cor. SW NW, Section 23-9-6, is a location. Tidal-Osage Oil Co.'s No. 4 Harjo, SE cor. NW SE, Section 23-9-6, is spudding. Barnsdall Oil Corp.'s No. 7 Carter, NW cor. SW NW, Section 24-9-6, is drilling at 108 feet. Indian Territory Illuminating Oil Co.'s No. 6 James, C SW SW SE, Section 24-9-6, is drilling at 250 feet. Mid-Continent Petroleum Corp.'s No. 5 Tayeche, NE cor. SE SW, Section 24-9-6, is a rig. Tidal-Osage's No. 4 Mahardy, C SW NE SW, is drilling at 3,000 feet, Section 24-9-6. Empire Gas & Fuel Co. is spudding No. 1 Noble, C NW NW SE, Section 25-9-6. Gypsy Oil Co.'s No. 1 Harjo, NW cor. SW, Section 25-9-6, is drilling at 555 feet. Prairie Oil & Gas Co.'s No. 4 Bloss, NW cor. SW NW, Section 25-9-6, is drilling at 110 feet, and No. 5, SW cor. NW NW, is drilling at 112 feet. Gypsy Oil Co.'s No. 8 Fixico, NW cor. NE NE, Section 26-9-8, is drilling at 525 feet. Indian Territory Illuminating Oil Co.'s No. 5 Bowlegs, NW cor. NE SE, Section 26-9-6, is drilling at 1,015 feet, and rigging up No. 8, NE cor. SE SE. Empire Gas & Fuel Co. is spudding No. 1 Wilson, NE cor. NW NE, Section 34-9-6. Independent Oil & Gas Co.'s No. 1 Cobb, SW cor. NE NE, Section 7-9-8, is a location. Indian Territory Illuminating Oil Co.'s No. 1 School Land, SE cor. SW, Section 16-8-5, is a rig. Magnolia Petroleum Co.'s No. 1 Thomas, SW cor. NW, Section 22-8-7, is drilling at 940 feet.

Hughes County Completions

Independent and Continental companies have abandoned No. 2 Long, C SE NW SE, Section 32-8-8, at 4,012 feet. Producers & Refiners Corp.'s No. 4 Walker, C NW SW SE, Section 32-8-8, has been abandoned on account of lost hole. Dixie Oil Co.'s No. 7 Gardner, C SE NW NE, Section 5-7-8, sand at 4,205-16 feet, made 1,200 bbls.

Hughes County New Work

Producers & Refiners Corp.'s No. 1 Shawnego, C NE SW, Section 14-7-8, is a rig. Magnolia Petroleum Co. is underreaming 12-inch casing at 1,486 feet in No. 1 Harjo, C NE NE SE, Section 29-7-8.

Grady County Completions

Marland Oil Co. and Joe Ray's No. 1 Woods, NE cor. SE NE, Section 17-3-5w, sand at 1,810-20 feet, made 200 bbls. Carter Oil Co.'s No. 1 Sahm, NW cor. SW, Section 35-3-5w, sand at 1,434-43 feet, made 65 bbls.

Grady County New Work

Carter Oil Co. is building rig for No. 1 Horton, SE cor. NW, Section 8-3-5w. Cox and others' No. 1 Gardenhire, NW cor. SW NW, Section 16-3-5, is a location. Gant and others' No. 1 Hicks, NW cor. SW SE, Section 16-3-5, is a rig. Carter Oil Co.'s No. 2 Adair, NW cor. SE NW, Section 27-3-5, is a location. Same company's No. 3 Eagle, SE cor. NE SW, Section 27-3-5w, also is a location. Its No. 2 Cross, NW cor. SW, Section 33-3-5w, is a location. Its No. 4 Lindsey, SW cor. NW SW, Section 35-3-5w, is a location; also No. 5, SE cor. NW SW. On its Sahm lease, No. 2, NE cor. SW NW, Section 35-3-5w, is a location.

Jefferson County Completions

Humble Oil & Refining Co.'s No. 1 Cline, SW cor. SE, Section 27-6-5w, dry and abandoned at 2,002 feet.

Jefferson County New Work

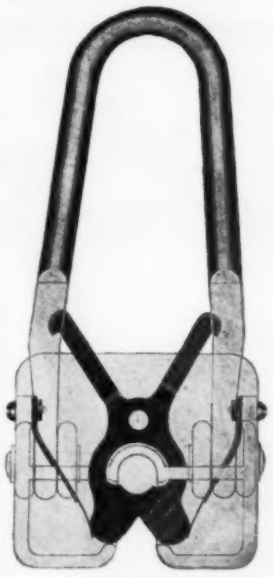
John Armor and others' No. 1 James, SW cor. SE SW, Section 28-6-5, is a rig.

Carter County Completions

Skelly Oil Co.'s No. 1 Smith, NW cor. SE, Section 3-2-3w, sand at 2,250-97 feet, flowed 779 bbls. the first 24 hours. Magnolia Petroleum Co.'s No. 11 Lahman, SE cor. SW NE, Section 23-2-3w, sand at 2,355-60 feet, made 150 bbls. Coline Oil Co.'s No. 7 Higgins, SE cor. NE, Section 7-2-2w, sand at 2,146-98 feet, shut in for 5,000,000 feet of gas. Joe Hivick and others have abandoned No. 1 McCoy, SW cor. NW NW, Section 25-2-2w. Magnolia Petroleum Co.'s No. 2 Hardin, SW cor. SE SE, Section 18-1-3w, sand at 2,812-47 feet, made 653 bbls. Simpson Fell Oil Co.'s No. 3 Pernill, NW cor. SE NW, Section 34-1-3w, sand at 2,995-3,035 feet, shot with 80 quarts, made 5 bbls. Westheimer & Daube's No. 2 Snyder, SE cor. SW SW, Section 34-1-3w, sand at 2,483-97 feet, made 100 bbls.

Carter County New Work

Amerada Petroleum Corp.'s No. 28 Baptiste, NE cor. SW SE, Section 20-5-1, is drilling at 320 feet. Same company's No. 10 Criner, CWL NE NW, is rigging up standard tools. Humble Oil & Refining Co.'s No. 1 Lyles, SW cor.



The **B&A** Underslung Rod Elevator

All wearing parts interchangeable

UNDERSLUNG and balanced, making rods hang straight, preventing kinked rods.

Safety latches, one above the other and acting from opposite sides, entirely close opening, making it impossible for rods to twist out if hook does not swivel.

Wearing parts dovetailed into body and easily renewed.

Made in any size for any kind of rods.

B. & A. SPECIALTY CO.

404 W. First St. Tel. 3-3282

TULSA, OKLAHOMA

Approved for Field and Refinery Service

Stanley

Solid Woven Cotton Belting

"WING-SHOOTIN'"

A friend, an international hunter, just came in from an African elephant hunt. "What is the sportiest shooting you ever had?" we asked, expecting a thrilling story of the great game trails.
"I think," said he, "wing-shootin' at canvas backs in the half light with a high wind right here at home is about the sportiest there is on earth."
—And by the way, when you slip out for a day or two, isn't it pretty nice to know that the Stanley Solid Woven Belt you left on the job will still be on the job when you get back?

Write, wire or phone for quick service.

Stanley Belting Corporation

15 N. Jefferson St., Chicago
320 Broadway New York
124 Adelaide St., W., Toronto, Ont.
42A Southwark St., S. E. 1, London, England

WAGNER SUPPLY COMPANY OF TEXAS

Best Borger Breckenridge Cross Plains Ranger

W. R. Tucker
5311 Richard Ave.,
Dallas, Texas
Telephone H6525

T. R. Bartlett
P. O. Box 909
Tulsa
Phone Dial 2-7283

On permanent display at Tulsa Industrial Exhibition

Pacific Coast Rubber Co.
316 Mission St.,
San Francisco, Cal.

300 E. 3rd St.,
Los Angeles, Cal.
Hewitt Rubber Co. of Colo.
1238 Broadway,
Denver, Colo.

STANLEY BELTING

MADE IN SCOTLAND

In 6 Years Not One Complaint Not One!

Why Working Barrel Owners Rely So Much on Hoover Balls

HERE'S a vital fact: For six long years the original Hoover Special Oil Well Balls installed in hundreds of Working Barrels in the oil fields have been giving 100% satisfaction! Not one complaint—not one! Today literally millions are in use—and still not a single complaint.

The Secret? Not Only What They're Made of—But How They're Made!

Developing the Hoover Special Oil Well Ball was a heartbreaking task. It took us years. It puzzled the best manufacturing brains in the industry. But when finally produced we had done something no one has yet been able to duplicate. You can analyze the steel. You can determine what goes into it. *But only three men in the world know HOW they're made.*

Specify Hoover Balls in your oil well equipment and be safe.

HOOVER STEEL BALL COMPANY
Ann Arbor, Michigan

Chicago: 1901 Mallers Bldg.
Detroit: General Motors Bldg.
Philadelphia, Liberty Trust Building

HOOVER
METAL BALLS

NW SW, Section 2-2-3w, is drilling at 305 feet. Iowa Oil & Refining Co.'s No. 4 Pierce, SW cor. NE SE, Section 7-2-2w, is drilling at 700 feet. Carter Oil Co. is moving in rig for No. 3 Pierce, NW cor. SW SW, Section 8-2-2w. Magnolia Petroleum Co.'s No. 2 Cox, SE cor. SW NW, Section 15-2-2w, is a location. Magnolia Petroleum Co.'s No. 4 Wilson, SW cor. SE SE, Section 16-2-2w, is a rig. Same company's No. 1 Pollock, SW cor. SE, Section 14-1-3w, is drilling at 60 feet. It also has rig on ground for No. 6 Hardin, NW cor. NE NE, Section 19-1-3w.

Production of various Oklahoma fields by companies for the past week follows:

Burbank Field

Company	Wells	Prod.
Carter Oil Co.	283	4,854
Comar Oil Co.	7	98
Devonian Oil Co.	16	110
Mid-Cont. Pet. Corp.	106	995
Gypsy Oil Co.	193	2,320
Kewanee Oil & Gas Co.	30	3,303
Laurel Oil Co.	16	123
Lewis Oil Co.	24	1,323
Lorraine Oil Co.	15	79
Midland Oil Co.	37	434
Mid-Kansas Oil & Gas Co.	46	1,032
Peters-Oliphant	5	683
Phillips Pet. Co.	238	16,113
Delmar Oil Co.	16	589
Phillips-Skelly	180	1,901
Prairie Oil & Gas Co.	127	2,541
Producers & Refiners Corp.	29	204
Roxana Pet. Corp.	54	495
Seamens	1	0
Simmons-Moore	29	166
Sinclair Oil & Gas Co.	144	1,121
Skelly Oil Co.	33	950
Tidal-Osage Oil Co.	42	431
The Texas Company	16	166
Twin State Oil Co.	24	264
Total	1,711	40,285

South Burbank

Phillips Pet. Co.	5	212
Prairie Oil Gas Co.	12	1,310
Sinclair Oil & Gas Co.	1	8
Midland Oil Co.	2	34
Total	20	1,664

Kay County Extensions

George S. Boles	5	156
Carter Oil Co.	11	795
Comar Oil Co.	17	833
Mid-Continent Pet. Corp.	16	624
Gypsy Oil Co.	18	265
Laurel Oil Co.	5	319
Mid-Kansas Oil & Gas Co.	10	862
Phillips Pet. Co.	32	1,795
Prairie Oil & Gas Co.	4	79
Pure Oil Co.	4	190
Roxana Pet. Corp.	8	196
Dye-Tomlinson	8	201
Skelly-Phillips	20	272
Sinclair Oil & Gas Co.	5	151
The Texas Company	16	178
Twin State Oil Co.	16	595
Total	195	7,411
Grand Total	1,926	49,360

North Braman

Comar Oil Co.	46	13,443
Gypsy Oil Co.	1	10
Mid-Cont. Pet. Corp.	2	1,131
The Texas Company	3	222
White Eagle Oil Co.	1	8
Total	52	14,814

South Braman

Braman Oil Co.	3	180
Comar Oil Co.	26	5,903
C. B. Davis	1	0
Shawver and others	1	0
Wentz Oil Corp.	1	860
Total	32	6,943

Tonkawa Deep Sand

Amerada Pet. Corp.	7	1,695
Barnsdall Oil Co.	3	344
Blackwell Oil & Gas Co.	5	1,530
Comar Oil Co.	45	11,763
Marland Oil Co. & Mid-Cont. Pet. Corp.	6	409
Gypsy Oil Co.	22	3,788
McMann Oil Co.	1	4
Pennok Oil Co.	4	74
Phillips Pet. Co.	1	37
T. B. Slick	2	1,587
The Texas Company	13	1,444
Wentz Oil Corp.	19	4,826
Total	128	27,501

Garber Field Deep Sand

Carter Oil Co.	2	67
Marland Oil Co. & Mid-Cont. Pet. Corp.	10	305
Healdton Oil & Gas Co.	1	8
Roxana Pet. Corp.	8	1,158
Sinclair Oil & Gas Co.	29	3,207

Oswego Lime

Sinclair Oil & Gas Co.	1	27

Layton Sand

Roxana Pet. Corp.	9	1,981
Sinclair Oil & Gas Co.	20	5,620
Marland Oil Co. & Mid-Cont. Pet. Corp.	6	1,454

Tonkawa Sand

Roxana Pet. Corp.	17	2,684
Sinclair Oil & Gas Co.	19	1,416
Marland Oil Co. & Mid-Cont. Pet. Corp.	6	448

Hoover Sand

Roxana Pet. Corp.	5	135
Sinclair Oil & Gas Co.	17	2,687
Marland Oil Co. & Mid-Cont. Pet. Corp.	2	35

Summary Garber Field (All Sands)

Carter Oil Co.	2	67
Marland Oil Co. & Mid-Cont. Pet. Corp.	32	2,192
Mid-Cont. Pet. Corp.	2	50
Healdton Oil & Gas Co.	1	8
Roxana Pet. Corp.	38	5,958
Sinclair Oil & Gas Co.	87	12,967
Total	162	21,232

PROMINENT OIL COUNTRY BANKER DIES IN OIL CITY

OIL CITY, Pa., Oct. 15.—Howard R. Merritt, aged 59, president of the Oil City Trust Co. and one of the leading business men in this city and widely known throughout Pennsylvania, died at his home in Reed Street yesterday afternoon.

Mr. Merritt was born May 14, 1867, in Oil City, the son of Mr. and Mrs. D. R. Merritt. He had spent his entire life in this city. He started work for the Oil City Trust Co. in 1882 as a messenger and worked his way up through the various positions, being made treasurer after the death of C. M. Loomis in January, 1904, and was elected president January 13, 1920, which position he held

Howard R. Merritt

until the time of his death. He was also vice president of the Alum Rock Gas Co. and president of the Citizens Savings & Loan Association.

In politics Mr. Merritt was a Republican and was prominent in the affairs of that party.

Mr. Merritt was a member of the Wanango Country Club, the Venango Club, Petrolia Lodge 363, F. & A. M.; Oil City Chapter, Royal Arch Masons, 236; Talbot Commandery 43, Knights Templar; the Venango Lodge of Perfection, the Pennsylvania Consistory, of Pittsburgh, and the Mystic Shrine.

Mr. Merritt was married to Miss Grace Lucas of this city on October 2, 1907. He is survived by his widow, his mother, Mrs. D. R. Merritt; two sisters, Mrs. John L. Bracken and Miss Mildred A. Merritt; and a brother, Archie D. Merritt, all of Oil City.

Funeral services were held Saturday afternoon, the Rev. T. G. Koontz, D. D., pastor of the First Presbyterian Church, officiating. Interment was in Grove Hill Cemetery.

COURSE IN GEOPHYSICS

The first course in geophysics to be introduced in American colleges and universities has been added to the curricula of the Colorado School of Mines, President Coolbaugh stated in announcing the establishment of the department of geophysics with Dr. A. C. Heiland as professor and head of the new department. The new course embraces the use of the torsion balance, siesmograph, magnotomic and electrical methods for scientific prospecting of oil and other mineral deposits.

POTTAWATOMIE LEASE SALE

The Commissioners of the Land Office of the State of Oklahoma will receive sealed bids until 2 p. m., November 16, 1926, for oil and gas leases on school and state lands as follows: Lots 3, 4 and W half of SE Section 16, Township 6n, Range 5e, 137.36 acres, and SW Section 16, Township 6n, Range 5e, 160 acres.

Don't Underrate This Underreamer

Its lugs are made of Agathon Alloy Steel—the steel every roughneck regards as a friend and the hardest rock fears as an enemy. Underreamers made of this super-steel require fewer pullings, fewer dressings and save untold work, delays and grief. If your product embodies parts subjected to excessive stress, wear or strain let our metallurgists help you select the analysis of Agathon Alloy Steel that will enable it to withstand the severest service and insure its success. Just write us.

We show a Wilson Perfection Underreamer with enlarged views of lugs made of Agathon Alloy Steel

ACATHON STEELS

THE CENTRAL ALLOY STEEL CORP., Massillon, Ohio

Cleveland Detroit Chicago New York Syracuse
Philadelphia Los Angeles, California Tulsa, Oklahoma

AGATHON
ALLOY STEELS

Note the Table of Contents

110 pages of bearing data, recommendations and *knowledge*, based upon experience with 160,000,000 successfully applied bearings! That's the new Timken Engineering Journal, complete with figures and facts which are governing the adoption of Timken Bearings for every type of mechanical device, throughout industry.

New curves of endurance, output, and economy are being charted by means of Timken tapered design, Timken *POSITIVELY ALIGNED ROLLS*, and Timken-made steel, among the many Timken features. The Timken Engineering Journal tells exactly *why* and *how*. Your request on your letterhead brings your copy.

THE TIMKEN ROLLER BEARING CO., CANTON, O.

Technical information regarding bearing sizes and their mountings can be secured from the Timken Roller Bearing Service & Sales Company's Branches located in the following cities: Atlanta, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Dallas, Denver, Detroit, Kansas City, Los Angeles, Memphis, Milwaukee, Minneapolis, Newark, New York, Omaha, Philadelphia, Pittsburgh, Richmond, St. Louis, San Francisco, Seattle, Toronto, Winnipeg.

KENTUCKY-TENNESSEE

(Continued from Page 87)

have been developed in the Weir and Berea sands, an extension is reported in southeastern Magoffin County, not far removed from the Floyd County line. The Ivyton Pool is being further extended in that section and constitutes the best new pool found for some time. Hupp, Duff & Chiles have brought in a number of nice producers in advance of this pool, opening up prospective territory.

Getting away from the Weir and Berea sands, operators are of the notion that deeper drilling should be done to test lower strata, if they exist. Several deeper tests are already under way on a structure found by a geological survey. This structure is on Indian Creek, in Knox County, and the Petroleum Exploration Co.'s deep test on the Helton property on this structure is reported to be close around 500 feet at last report. Dizney & McKee are working at a deep test at Bailey's Switch, same county, while the Foreman Lumber Co. is drilling on its own holdings on Sinking Creek, same county. Unknown parties, said to be from Beattyville, Lee County, are working at a test on Bird Creek, same county.

The wildcat of Asher, Sampson and others, on Pleasant Run Creek, near Pine Knot, in McCreary County, is reported around 500 feet and the owners are looking for an extension of the Beaver sand which furnished the bulk of the production of the Wayne County Field for 25 years.

In District 31, in southeastern Magoffin County, near Ivyton, the Louisville Gas & Electric Co. is reported to have drilled in an excellent gas well on the Whittaker property.

In the North Weir Field of Lawrence-Johnson Counties, District 22, the Swiss Oil Corp.'s No. 21, on the James Skaggs lease, is good for 6 bbls. In District 32, the same company's No. 47, on the P. P. Holbrook lease, is also a 6-bbl. producer, while its No. 24, on the J. M. Fyffe lease, District 33, is good for 8 bbls. No. 48 is drilling for this company on the P. P. Holbrook lease.

Western Division

The bringing in of a shallow sand well in Warren County by the Wood Oil Co., on the Davenport lease, at Thomas Landing on the Barren River, northwest of Bowling Green, is one of the features of the western division. This lease was first developed by the Big Jack Oil Co., and was purchased a couple of years ago by the Wood Oil Co. The new well flowed high above the drilling mast and has been estimated as good for 150 bbls. or more at the start off. Wells good for 3 bbls. each are reported completed on the James Deathridge and Covington leases, same county.

Cumberland County

Operators are getting busy in the vicinity of the Hopewell church, in the northern part of Cumberland County, where the Paragon Development Co. is putting in a new line to care for the growing production of what is called the Hopewell Pool, in the Crocus Creek district, where back in the early eighties a well was drilled for salt, but spouted oil, which ran into Crocus Creek and thence into the Cumberland River. The heavy rains in that part of Kentucky delayed the laying of pipe for a short time. The line has reached within a short distance of the field, 2 miles away to be exact, and all line is strung for that distance to the Brockman lease and the fourth car of line pipe has arrived to complete the line to Hopewell Church. This will give an outlet for nice production with all tanks practically full of crude. In this pool, Wood-Haislett, McLennon and Calhoun have had a fishing job with a broken stem at 5 feet in the sand and from the amount of oil already in the hole, it looks like a nice well, making a better showing than No. 4, which put 6½ inches of crude in a 250-bbl. tank in three hours. This is very shallow as the oil is found in the Upper Sunnybrook formation around 275 feet. As soon as No. 5 is completed the drilling outfit will move to No. 6 location on the same farm.

In the Hopewell Field, Baird & Hickman are drilling No. 2 on the Fulton Grider lease to the sand below the Pencil Cave, which they topped at 741 feet, or 140 feet below the cave. This is even a better well than the No. 1 on the Baker lease, which started at 32 bbls. an hour. Noble L. Wood, well-known geologist and one of the owners of the Brockman lease, spent from April 1 to September 30, 1925, doing geological work in this field before putting down a well, which was No. 1, on the Brockman lease, which developed into a roaring gasser. Mr. Wood also controls a nice acreage about 4 miles north of Hopewell Church on the same structure. One feature of this structure is that a deep pay is found that is not found further to the south in Cumberland County. The structure on which the present wells are located continues north into Adair County, some distance and is destined to get a heavy play.

Barren County

The Glasgow Field of Barren County is growing slightly in production as the September runs from the county for that month totaled 30,104.63 bbls., the oil handled by the Paragon Development Co., of Toledo, Ohio, and the Stoll Refining Co., of Louisville. Barren County wells show remarkable staying qualities, although they are usually small producers at the start, but maintain close to their initial output for a long period. R. B. Tyler has an oil well on the D. C. White farm, a mile northwest of Glasgow on the Knob Road, that has a unique record. This well was brought in and put on the pump nearly eight months ago. It averaged 10 bbls. for a period and on its seven-months' birthday the well began to pump 20 bbls., and has never gone below that record daily since. There have been 13 wells completed on this lease. No. 13, on this lease, is reported completed and estimated at 10 bbls.

In the Lecta Pool, southeast about 3 miles from Glasgow, the Esslinger Oil Co.'s No. 15 C. B. Jones lease, is reported around 18 bbls. initial.

In the Hall Baker Pool, the big lease of the Consolidated Gas Co., on the H. W. Duff farm, is among the shining lights of the Barren County Field. No. 48, on this tract is reported around 20 bbls. initial.

In the Emery-Moore Pool, Fred C. Moore's last well on the Howard lease, is reported at 8 bbls.

To the south of Barren, in Allen County, two completions are reported. One is on the Thartton lease, for 3 bbls. and the other on the Lon Oliver lease, for 3 bbls.

Owensboro Field

The Illinois Pipe Line Co., on October 1, took over the pipeline of the Indian Pipe Line Corp., which passes through the Owensboro Field of Hancock, Ohio and Daviess Counties, thence on to Lawrenceville, Ill. William T. McCray, formerly of Robinson, Ill., has been made superintendent of the system, with Kentucky headquarters in the Odd Fellows Building at Owensboro, assisted by Z. Mitchell. Both parties have moved their families to Owensboro. Both are fine gentlemen and will make many friends in their new surroundings and both are real pipeline men with years of experience.

Weather conditions have not been very favorable for development work during a few weeks in the Owensboro Field, although a few completions are being made from time to time, but nothing of a sensational development is noted, as most of the ventures were on the wildcat order, and has a sprinkling of dusters, such as are found in all fields. The test of the Ohio Oil Co. on the Daly lease, at Pleasant Ridge, is reported a duster, while its No. 1, on the Lonzo Crowe 50 acres, is reported making a nice showing in the Jett sand. This company is reported drilling a test on the F. S. Crowe farm, also on the C. L. Phillips 78 acres; No. 1, on the C. Banham lease and No. 2, on the J. C. Ellis lease.

The Petroleum Exploration Co.'s test, on the Buck Howard lease, had a show-

(Continued on Page 111)

Ready to Serve Your Requirements

REPUBLIC

Tubing, Casing, Line, Drive, Rotary Drill Pipe

Write for prices

REPUBLIC IRON & STEEL COMPANY

GENERAL OFFICES:

REPUBLIC BLDG. YOUNGSTOWN, OHIO

SALES OFFICES:

Boston New York Philadelphia Detroit Birmingham
St. Louis San Francisco Cincinnati Chicago
Pittsburgh Dallas Denver

Supplying the OIL INDUSTRY With STEEL SHEETS

MANUFACTURERS of Steel Tank Equipment are insuring many additional years of service by using *Sheffield Copper Steel Sheets* for their sheet steel requirements. Usage has proven this longer-life.

SHEFFIELD
OPEN HEARTH BLUE ANNEALED AND COPPER STEEL SHEETS

Sheffield Blue Annealed Copper Steel Sheets are ideal for both welded and bolted tanks. They are exceptionally good, too, for any purpose where Blue Annealed Sheets are used. Proximity of our plant and the flexibility of our manufacturing facilities insure the oil industry prompt service on Blue Annealed Sheets at all times. A full range of sizes from No. 8 to No. 16 ga. inclusive are available.

FOR EQUIPMENT DURABILITY —SPECIFY SHEFFIELD SHEETS

An ever increasing demand indicates the high quality and the extreme satisfaction with which *Sheffield Blue Annealed Copper Steel Sheets* are used. Prompt shipment at all times from Kansas City will aid you to materially lessen your inventory burden.

Sheffield Steel Corporation

Successors to
(THE KANSAS CITY BOLT & NUT COMPANY)
KANSAS CITY, MO.

We manufacture New Billet Reinforcing Bars, Rail Steel Reinforcing Bars, Blue Annealed Sheets, Merchant Steel Bars, Merchant Iron Bars, Bolt and Nut Products, Sucker Rods, Pull Rods, Track Spikes, Forgings

REMOVE WATER FROM GAS WELLS FOR PROTECTION

(Continued from Page 77)

moving water from wells is to operate as blowing wells.

Last, in wells under heavy water conditions, whether of high or low pressure type, the most adequate means of removing water from same is by the pump and power outfits.

Plugging Off Fluid

2. What do you consider the most satisfactory method of plugging off fluid in gas wells?

(a) Where it is desirable to retain the upper gas.

(b) For the protection of the field when abandoning wells.

Problems may be solved by many different methods and like results obtained, but first of all, before any problem can be solved, there must be a set of conditions given or assumed. So, in this case, we will assume that we have a drilling rig, tools and power for use in plugging off the fluid which is encountered below the gas-producing formation, either in the case of drilling a new well or drilling a pocket in an old well, as I believe the use of the rig and tools are most essential in plugging off fluid from below, although light flows of water have been shut off with a second packer; this method, however, only sufficing for a short time and by no means a satisfactory method for all time. If perchance the fluid is encountered just below the gas sand at a comparatively small distance be'ow same, and the flow was such as it was decided to cease drilling and plug off, then, of course, the space for plugging is limited and one will, in all probability, have to dispense with the second pine plug and much of the filling. In the above case, however, after drilling has been suspended and the hole measured up so as to find out how much hole can be used for plugging, secure a pine plug of hole and mandril type, 3 inches in length or better, if the situation permits, with the mandril tapered at both ends. Have a lead plug from 8 inches to 14 inches in length, of diameter such that will give sufficient clearance when dropping same, stones of various sizes, clay if readily available; if not, then cement and sand.

Method of Operation

When the hole is comparatively dry, or the flow of fluid is small, drop in a little clay, allowing sufficient time for same to settle, then a few stones so as to form the seat for the plug, the amount of filling material used depending upon the space available for plugging, as mentioned above. Then, tie plug with mandril inserted, to the bottom of tools, with just enough string to carry same. Then run in tools, having line previously marked so as to know plug is at the proper depth when in place. The reason for tying the plug to the tools is that if the plug is dropped and there is a column of water in the hole, and the water should be carrying foreign matter, due to dropping of clay, etc., the clearance between the plug and wall might not be sufficient to permit the passage of water, due to the impact of the plug striking the water, a bridge thereby resulting, which perchance might have to be drilled out. With the plug in place, raise and lower tools, so as to drive the mandril into the plug, thereby expanding same, effecting the seal and breaking string carrying the plug. Then pull the tools out of hole and drop in stones of sizes sufficient to effect a bridge, with the tapered end of the mandril, due to wedge action in case of a tendency of upward movement of the plug. Next, drop in a little clay so as to fill the void spaces between the rock and stone. Then, drop lead plug and run tools in hole again and drill upon lead plug at least one hour, and then if there should be any available space, use more clay in filling in on top of plug.

In case the fluid is struck at a greater depth below the gas-producing formation, the method is practically the same after the decision is reached as to where the plug will be set, and in this case one can use more filling below the plugs if the decision is made to plug at a less depth than the bottom of the hole, and it would be better to use as much filling on top of the plug as possible, and for greater surety it might be well to run a second pine plug.

3. What do you consider the most satisfactory method of plugging off fluid in gas wells?

(b) For the protection of the field when abandoning wells.

Dut to most abandonment work being done with portable outfits, three poles, etc., I will treat this subject under these conditions. In casese where dry holes or light wells are drilled, and it is decided to plug or abandon same before the rig is moved, the method of plugging in these cases is practically the same as just explained.

Most Important Phase

The most important phase of the work as to the plugging and abandonment of old wells is to have competent and reliable men in charge of this work, with a full realization that the work they are doing is one of the most important in our business, and with an understanding of the danger of ruining the field if great care and precaution are not exercised in this work. They must also be aware of the fact that they are not merely plugging off the gas so as not to break through or bubble at the surface, but that they are plugging off the water from above, so that when the casing is pulled the hydrostatic pressure resulting from the water column formed will not cause the water to permeate the gas sand, as in most cases the pressure of this water column will be greater than the present rock pressure in the old wells. Further, they must also be aware of the fact that there is no check on their work until it is too late or much damage has been done.

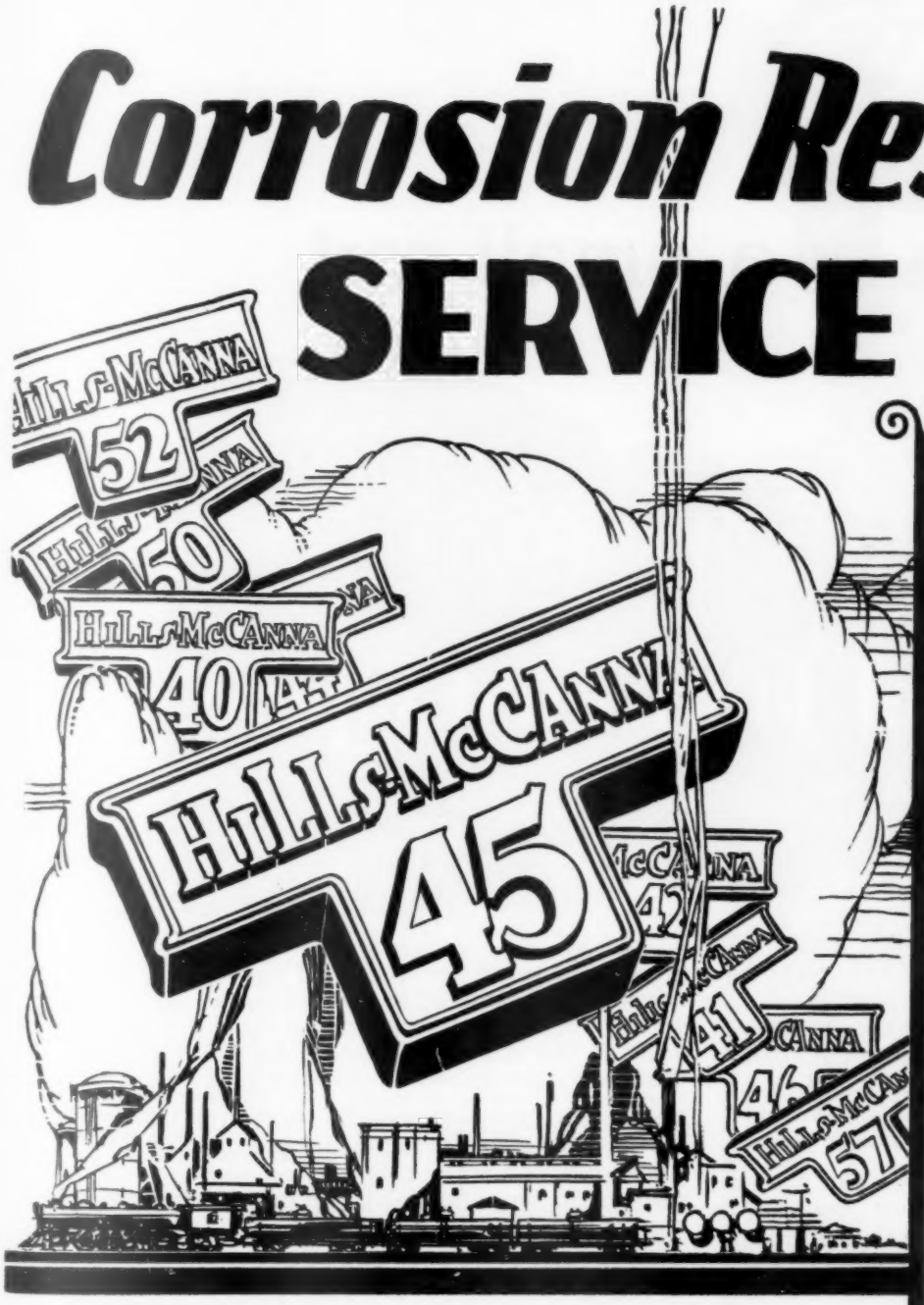
All men engaged in this work have their own method of plugging, as there is no standard method, and they are probably doing good work, but I believe the most satisfactory method is that, when used, one feels absolutely sure the plugs are in the proper place, previously decided upon, will remain there and have effected a seal, and it is with these three points in view that we use the following methods:

After the decision has been made to abandon the well and the necessary information secured as to the depths of the sand, packer and bottom of hole, and the tubing is pulled, bail the hole dry if possible and then run measuring line so as to check the bottom hole measurement in case the hole might have been filled up somewhat, due to caving. Then figure the number of feet off bottom or the depth at which the first plug is to be set, preferably in the top of the Clinton formation, and if there are sufficient pumpings, clay, etc., available, to fill up to this point, do so, but slowly and carefully so as not to bridge the hole, and run the bailer with the line previously marked, frequently, so as to be sure that the filling material is going down. If perchance there is not sufficient clay, pumpings, etc., available for filling up to the point of plugging, secure sufficient junk pipe such as will screw together and run into the hole, leaving same sitting on elevators. Then screw a pine plug, tapered at both ends, previously drilled and a nipple inserted and pinned into the tubing, and drop if the hole is wet, and in case the hole is dry let same in with bailer. The tubing will support the plug and material at the proper depth. If the hole was filled up to the point of plugging from below and is wet, then invert the plug and drop into the hole with sufficient junk tubing on top of same to sink plug.

It is at this point that bridges, such as crotched or crooked limbs, are frequently used to support the plug, but due to only having light tools with which to force the bridge to the depth required, and after wearing on the side of casing going down, I am afraid that the chances of moving the bridge when dropping in plugging material is too great to follow this method.

If the first plug is in place and the

Corrosion Resisting SERVICE



OPERATORS have learned that every process in their plant in which corrosion or erosion are factors demands the use of alloys of guaranteed physical characteristics. They know the wisdom of buying alloys on the basis of "ultimate safety and economy," rather than on such open specifications as "phosphor bronze," "manganese bronze," etc. Quite naturally they look to Hills-McCanna for Alloys to meet their requirements satisfactorily.

Hills-McCanna Alloys are "time tested" Alloys. Wherever you see a product marked "Hills-McCanna," whether it be a valve, a pump part, a pyrometer protection tube, a thermometer well, a fitting, liner, piston-ring, gear, or bushing, you may know that it has submitted itself to a gruelling test on the job before it was adopted for that particular service. We acknowledge their limitations in certain elements and recommend and encourage their use only where service tests have proved that longer life will result.

Hills-McCanna Alloys and Chemical Pumps *are* dependable. Our experience as founders of non-ferrous alloys since 1870 has taught us to make them so. And Industry has learned by actual use of our products for 56 years that Hills-McCanna renders *real* Corrosion Resisting Service.

HILLS-McCANNA CO.

2025 Elston Ave., Chicago

District Representatives

Edward Soph, 124 West 3rd St., TULSA, OKLA.
Edw. McSheehy, 310 Patterson Bldg., DENVER, COLO.
Green Bros., WICHITA FALLS, TEXAS
Chandler & Warden, 121 West Pico St., LOS ANGELES, CAL.
Harry Hartling, 832 Guardian Bldg., CLEVELAND, OHIO
Francis R. Glenner, 53 Park Place, Room 704, NEW YORK CITY

NON-FERROUS ALLOYS - CHEMICAL PUMPS
FORCE FEED LUBRICATORS

from a small coil

WHATEVER your fabricated piping requirements may be—whether a small coil, a simple bend, a welded header or complete piping for an oil refinery or industrial plant—you cannot afford to overlook the advantages that Midwest has to offer you.

When you place your order for fabricated piping with Midwest, you rely upon a Company that has the facilities and organization to do the work quickly and efficiently—from a small coil to carloads of fabricated piping. You are assured prompt attention, intelligent interpretation of drawings and specifications, and fabrication in accordance with the most modern practices. Each order is the most important order in the shop—that is the Midwest attitude.

Competent engineering service is available when desired to solve any piping problem. Frequently this service has resulted in simplification of piping design and substantial cost reductions.

This is little more than the beginning of the Midwest story. We shall gladly tell you the remainder if you will write for circular M-2.

MIDWEST PIPING & SUPPLY COMPANY
1400 South Second St.
ST. LOUIS, MO.

Tulsa Office: 805 Mayo Building

Chicago Office: 208 So. La Salle St.

Fabricators of Oil Refinery, Natural Gasoline Plant and Power Piping

MIDWEST Piping and Coils

bailer or measuring line has been run to make sure it is at the desired depth, then drop in rocks or stones of size such as would form a bridge due to wedge action with the top of the tapered plug in case of a tendency of the plug to move upward because of gas pressure below. Then drop in the filling material, sand and cement of rich mixture, if the hole is dry, then clay, and if the hole is wet use all clay. Fill up to a point just below the casing seat and set the second pine plug by sinking by being weighted from above, and dropping, if the hole is dry, binding and filling as in the case of setting first plug, always running the bailer or measuring line frequently so as to be absolutely sure the plugging material is going to the proper place. After the casing has been pulled, a tapered pine or the concrete plug is driven into the seat and more filling resorted to, the amount depending upon the supply readily available. It is also advisable to place some kind of plug at the top of the rock so as to prevent any caving afterwards from above and leaving a large hole, necessitating future filling.

I feel that when the above method is used, with care and precaution as to the insertion of plugging material, etc., and the running of measuring line or bailer frequently, that most satisfactory results are obtained.

NEW GAS PIPELINE, DILWORTH TO WICHITA

(Continued from Page 77)

of the country would permit. In one case, there were 110 joints in a section with no under-welds at all. This crew made from 16 to 34 welds daily. The smaller number of welds per welder was due to the more difficult lining and rolling operations.

The tie-in welding crew, under the direction of Lew Vincent for the contractor and Barney Arnold for the company, welded the sections into a solid line, made the bends, and kept back slack. Four to ten welds per day seems like a small amount of work from this crew, but it must be remembered that the sections were long. The daily footage progress is the best index for this crew, being from 2,600 to 3,300 feet. When they had passed on, there remained only the letting in of the slack and refilling of the ditch to complete the line.

Slack Saves the Line

Expansion and contraction of pipelines due to temperature changes are the cause of many leaks and breaks. To eliminate or reduce trouble from this natural phenomenon, it is the practice to hold back slack in a line while it is being constructed. To illustrate what would happen to a 50-mile pipeline laid in the summer without slack, a simple calculation will show that when winter temperatures are reached, the line will lack about 100 feet of reaching its destination. The result would be a series of expensive and dangerous breaks, each one of which would put the line out of service from four to twelve hours.

Experience has shown that the average line break on lines of this capacity waste enough gas to serve a town of 5,000 people for a period of three days, to say nothing of the inconvenience that a community might suffer in winter or the loss to industries through reheating of furnaces in manufacturing processes.

Slack is provided by throwing "wallops" or loops in the line when it is being lowered into the ditch. These loops are left out until the line is anchored and are then forced into the ditch. After listening to numerous terrifying tales about insufficient slack, H. J. (Abe) Crowell became a most ardent votary of slack. Since he had charge of the slack on this line, he tried to lay about twice as much line as he had ditch. Anyway, he did get about a mile and fifty inches of pipe into every mile of ditch and few breaks due to tight line have occurred.

The work of refilling the ditch was subcontracted to Ryan & Ingles of Tonkawa, Okla. They used some ingeniously reconstructed Fordson tractors that just pushed the ditch full of earth. Here, also, much grief was experienced, for in several places the line was laid so close to a thick-set hedge, that the ditchers were compelled to throw the earth up against the trunks of trees. In such places, the refillers were forced to abandon their machines and resort to hand labor and shovels.

Dresser Coupled Section

North of the 10 inch welded portion, lies the Dresser coupled line, being composed of 2.5 miles of 12-inch and 19 miles of 16-inch. The pipe for these portions of the line was shipped from warehouse stock and other supply yards. The stringing and back-filling operations were done by the same methods as were employed on the 10-inch sections.

Mexican laborers under Biddie O'Dell dug the northern seven miles of the ditch by hand and laid all the pipe. John Evanoff did the looking for Big Boss Ross and a gas-tight line was obtained.

The Ninnescah River crossing is about 18 miles south of Wichita and is on the 16 inch section of the line. For this crossing, the 16 inch, 40 pound per foot line pipe was replaced by 5½ inch, 70 pound per foot oil well casing. This extra heavy pipe was welded and reinforced on the bank and pulled across the river with a stump puller. To further assure a leakless crossing and to weight down the line, gas tight sleeves weighing 1,250 pounds each were substituted for the regular river clamps. As an additional safeguard against breakage, a curve was thrown in the crossing so that at the center of the river, the line is 20 feet upstream from the normal line of crossing. This is to eliminate strains caused by the pressure of the water on the line.

Public Safety Considered

In order to prevent damage to public property, due to any break or leak that might be thus caused, all railroad and main highway crossings are protected by another pipe of larger diameter than the main line. This outer shell is provided with vents so that in case a leak should occur under a road or railroad, the gas would be allowed to escape harmlessly to one side instead of becoming ignited from a train or motor vehicle. Heavier construction is always resorted to at such points.

The new meter station, constructed to measure the gas entering Wichita, is up-to-date in every respect. It is of welded construction and is so arranged that continuous service may be guaranteed. The careful arrangement of control gates permit any portion of the unit to be shut out for repairs without interrupting service.

KENTUCKY-TENNESSEE

(Continued from Page 107)

ing in the Jett sand, but drilled down into the Barlow, where it failed to find a pay and it is reported will plug back the hole to the Jett sand, hoping to make a small pumper of it.

The Leeper Oil Co. shot a Jett sand well on the Barker lease, which has the appearance of an average producer, possibly 10 bbls. initial. This well is within the proven field. This company in its first test on the Raymond farm, several miles in advance of production, failed to find the Jett sand, but going deeper in hopes of finding a pay in some lower formation. Should this well prove a commercial producer, it will add a large territory to the Owensboro Field. This same concern is reported to have drilled in a dry hole at a second venture on the J. A. Greer, 100 acres.

The Buette Dredging Co.'s last well, on the Alice Evans farm, is reported showing for about 3 bbls.

The Daviess County Oil & Gas Co. has a reported duster in a test on the Manuel Thompson lease, north of Whitesville. Courson & Ellis have one of the same kind in No. 1 on the A. Martin 65 acres, while the Petroleum Extraction Co.'s No. 2, on the Kirk-Woodward lease, looks like a failure.

CYCLONE
HIGH SPEED

The Only Hoist Operating on the GYRATING PRINCIPLE

WHAT is the *gyrating principle* — the exclusive feature which distinguishes Cyclone Hoists from all others? It is the distinctive rotating movement of two yokes which, operated by eccentric shafts, move smoothly into mesh with the powerful lift gear at directly opposite points. More than twice the usual number of lift gear teeth are always in mesh, assuring positive and uniform operation; a minimum of vibration; and exceptionally long life.

Every other detail of Cyclone Hoists is accurately designed to meet the exacting requirements of a high speed hoist of the greatest efficiency.

If you are interested in securing the maximum benefits from your investment in hoists, insist upon "Cyclone" Hoists.

Sold by Leading Oil Well Supply Houses

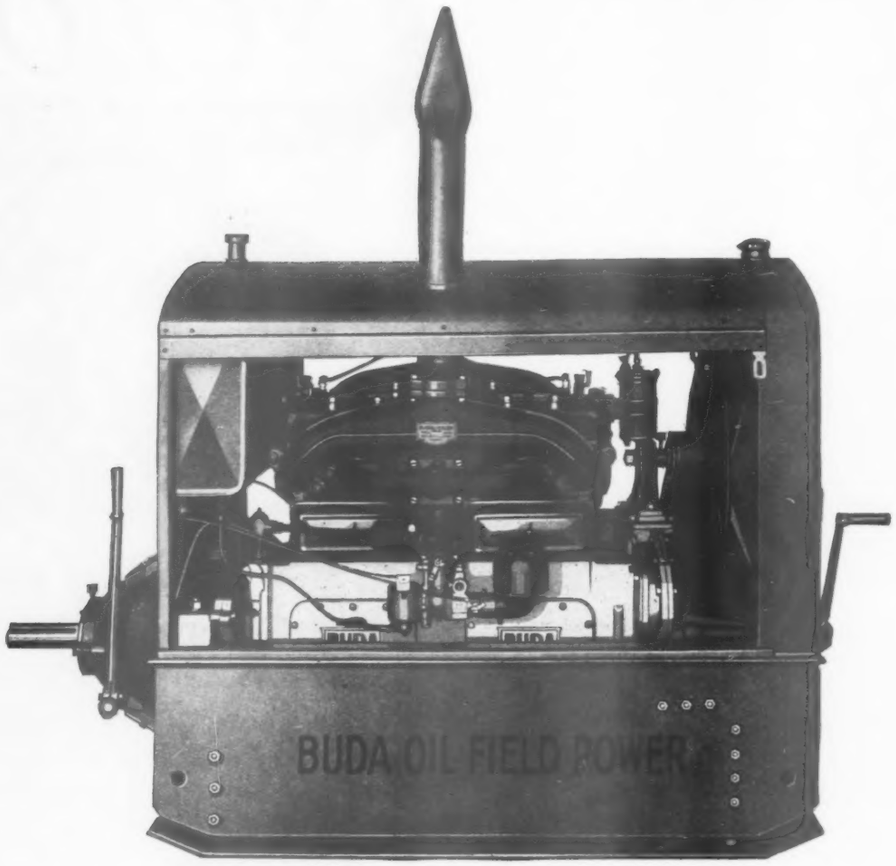
THE CHISHOLM-MOORE MFG. CO.

Manufacturers of "Cyclone" Hoists, "Matchless" Trolleys, and "Matchless" Derrick Cranes.

Cleveland, Ohio

Branches: New York, Chicago, Pittsburgh

CHISHOLM-MOORE
OVERHEAD HOISTS CRANES TROLLEYS TRACK SYSTEMS



Buda *Oil Field* Power

The standing of Buda Power in the oil fields is indicated by the partial roll call of successful manufacturers using Buda engines for their oil field equipment. These companies will tell you Buda means reliable power at low cost of operation.

Lufkin Fdry. & Mach'y Co.
United Iron Works
Wheatley Pump Works
Gaso Pump & Burner Co.
General Electric Co.
Lincoln Electric Co.
Sullivan Machinery Co.
Forrest E. Gilmore Co.
Armstrong Mfg. Co.
Barber-Greene Mfg. Co.
Garford Motor Truck Co.
Coleman Truck Co.
Gary Motor Truck Co.
American Well Works

Buda engines operate efficiently on gas or gasoline

Seven Sizes: 20 to 87 Horse Power
Write for complete specifications

THE BUDA COMPANY, HARVEY CHICAGO SUBURB ILLINOIS
ESTABLISHED 1881

Buda nation-wide parts service for Buda Oil Field Engines

BUDA
INDUSTRIAL
POWER

EFFECT OF DISSOLVED GAS UPON VISCOSITY AND SURFACE TENSION

By C. E. Beecher and I. P. Parkhurst*
Production Engineers, Empire Gas & Fuel Co.

At a pressure of 500 pounds, and a temperature of 70 degrees Fahrenheit it was found that a natural gas such as is associated with the oil would reduce the viscosity about 50 per cent when a given crude oil was saturated with the gas. Increasing the pressure another 500 pounds could not be expected to reduce the viscosity the remaining 50 per cent. However, some reduction in viscosity would take place. Pressures of 1,800 pounds may exist at depths around 4,100 feet and at present a large amount of oil is being produced from much greater depths. Under such pressures sufficient gas might dissolve in the oil to make the viscosity almost equal to that of kerosene.

Viscosity is the most important physical quality of oil which retards its flow through a pipeline or through the small irregular openings of the average oil sand, therefore, if some method of producing oil can be devised such that a major portion of the gas will remain in solution and the oil retain its fluidity it is possible that the volume of oil recovered from the sands can be greatly increased.

The surface tension of crude oil is reduced by dissolved gas. The results of experiments with two different crude oils saturated with gas at pressures from 400 pounds to 500 pounds indicate a reduction of approximately 20 per cent in the surface tension of the oils. Many of the small openings in an oil sand are of capillary size and hold a large per cent of the oil which is not recovered by present production methods. As the dissolved gas escapes from the oil the surface tension increases and likewise the capillary force which holds the oil within the sand. We are not prepared to say that surface tension is the only factor that holds the 80 per cent of the original oil in the sands. If, however, surface tension should be the only force and if by keeping the gas in solution the surface tension could be reduced by 20 per cent then we might expect an 80 per cent greater ultimate recovery from the sands.

A great volume of oil must flow through the sands at a rapid rate and for some distance to account for the large production of some wells. The expulsive force of natural gas dissolved in and associated with the oil, the rock pressure, the reduction in viscosity due to increased earth temperatures and other factors do not alone offer an explanation of the large gusher wells. It is believed that the flow of oil through the sands in such large volumes is only possible because of the reduced viscosity and surface tension of the oil resulting from the gas in solution.

The amount of natural gas that will dissolve in crude oil depends upon both the character of the gas and the character of the oil, if other conditions are constant. For example, a natural gas consisting mostly of methane is not as soluble as one in which some of the heavier hydrocarbons, such as ethane, are present.

For any given gas, the volume that will be dissolved depends upon the character of the crude oil, if other conditions are constant. The lighter gravity oils dissolve more gas than the heavier oils.

A few experiments were conducted to determine the solubility of gases such as carbon dioxide, hydrogen and air in crude oils. Carbon dioxide was found to be more soluble than natural gas, while hydrogen and air are only slightly soluble, the hydrogen being less soluble than the air. For this particular oil used the gas was found to be approximately four times as soluble as carbon dioxide. A similar ratio will probably apply to other crude oils.

Rock pressures of 1,000 pounds per square inch or greater are not uncommon in many oil fields, and at such pressures the volume of gas dissolved in the oil should be at least twice as great as that obtained from the laboratory experiments with pressures around 500 pounds per square inch. Table 1 has been prepared to show the cubic feet of gas dissolved in a barrel of oil at pressures from 300 to 1,000 pounds per square inch.

Table 1—Cubic Feet of Gas Dissolved in a Barrel of Oil at Different Pressures.

Gauge Pres. Lb. Sq. In.	Okla. Crude 30.2° A.P.I. Gas No. 1	Gas No. 2	Air	CO_2	Okla. Crude 35.4° A.P.I. Gas No. 1	Gas No. 2
300	57.0	46.5	12.3	162	71	54
500	95.0	77.5	20.5	276	118	90
1000	190.0	155.0	41.0	563	236	180

Other conditions remaining constant, the quantity of gas that will dissolve in oil depends upon the temperature. As the temperature increases the amount of gas that can be dissolved in the oil decreases, but even at the higher temperatures, large quantities of gas will dissolve in the oil. For example, at a pressure of 400 pounds and a temperature of 90 degrees Fahrenhiet, approximately 75 cubic feet of gas was dissolved in a barrel of oil while at a temperature of 110 degrees Fahrenhiet, 70 cubic feet of gas was dissolved in the same oil.

The viscosity of crude oil is greatly reduced when the oil contains gas in solution. The decrease in viscosity depends upon the amount of gas dissolved in the oil if other conditions are constant. An oil with high initial viscosity will show a greater relative decrease for a given amount of dissolved gas than one with a lower initial viscosity. The viscosity decreases with an increase in pressure because more gas is dissolved at the higher pressure.

An effort was made to determine the effect of dissolved air upon the viscosity of an oil. The results were not consistent. In some tests the viscosity was slightly reduced and in others, increased. The increased viscosity may be due to oxidation of the oil when in contact with the air.

L. P. Calkin and D. B. Dow found that the viscosity of two oils with which they experimented was increased when containing air in solution and in one oil the viscosity was decreased. They attribute the increased viscosity to the oxiding effect of the air when in contact with the oil under high pressure. It is of interest to note that the two oils showing an increased viscosity had an initial Saybolt viscosity of 550 and 577 sec. at 100 degrees Fahrenheit while the oil showing a decrease in viscosity had an initial viscosity of only 284 seconds at 100 degrees Fahrenheit.

As the temperature increases, the viscosity of crude oil decreases and at higher temperatures less gas will be dissolved in the oil, if other conditions are constant. However, the relative decrease in viscosity is approximately the same for an equal volume of a given gas dissolved in the oil at different temperatures.

Table 3 has been prepared to show the present reduction in viscosity when an equal volume of gas is dissolved in the same oil at different temperatures.

Table 3—Percentage Reduction in Viscosity for Equal Volumes of Gas Dissolved in the Same Oil at Different Temperatures.

Temp. F.	Gas Dissolved per bbl. oil 40	80
50	17.6%	26.7%
70	16.4	26.8
90	18.1	29.0
110	17.9	30.2

A large percentage of oil which present production methods fail to remove from the sands is held by capillarity. As the gas dissolved in the oil escapes, the surface tension is increased and, likewise, the capillary force which is a measure of the surface tension. If this increase in surface tension could be prevented during the process of extracting oil from the sands, a greater volume of oil should be recovered.

*Delivered before meeting A. I. M. and M. E., at Tulsa, Okla.

Here's a gauge you can read at a distance, from *either side*, in a *pitch dark* room.

The two opal glass dials are illuminated by a number of ordinary electric lights and there are *no shadows*. Thus, the slightest deviation in pressure can be easily seen, allowing close control.

This gauge has two complete movements and springs coupled to one connection. The new patented spring design has sufficient strength for high pressure and is extremely sensitive, which permits abbreviating the scale so that 15 lbs. on either side of the working pressure appears on dial.

AMERICAN
Double Face Illuminated
MASTER GAUGE

may be adjusted for hydrostatic head from the *outside* by means of a key *without removing* glass or pointer.

The steel case is beautifully finished in dull black hard rubber. Furnished with single or double dial in two sizes, 24 in. and 36 in. Is completely wired and equipped with plug socket.

Can be suspended by steel rods in a central location in large boiler rooms, or elsewhere, and seen from any point.

Write for Illuminated Master Gauge Catalog A-5.

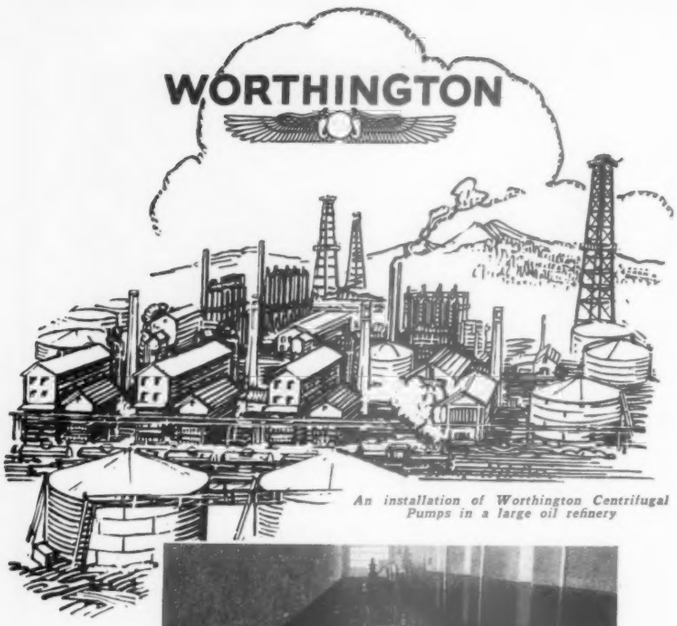
AMERICAN SCHAEFFER & BUDENBERG CORP.

338 Berry St., Brooklyn, N. Y.

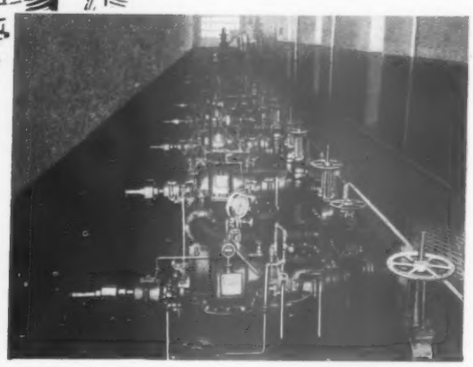
Atlanta, *Boston, Buffalo, *Chicago, Cleveland, Detroit, *Los Angeles, Philadelphia, *Pittsburgh, Salt Lake City, *Seattle, St. Louis, Tulsa
*Stock carried at these branches.

Direct Factory Representatives for Eastern Canada: Mechanical Equipment Co., 807 New Birks Building, Montreal
For Middle Western Canada: Kipp-Kelly, Ltd., 68 Higgins Ave., Winnipeg

Shows American Illuminated Dial Master Gauge and Illinois Stokers in National Glass Co., Ottawa, Ill.



An installation of Worthington Centrifugal Pumps in a large oil refinery



PUMPS
for refinery use

Maximum economy in oil refinery pumping is largely a matter of proper pump selection. The class of service to be performed and local conditions are vital factors which must receive full consideration.

Worthington makes all types of pumps —steam and power, reciprocating and centrifugal—for all classes of service. It maintains a corps of field engineers who are in constant, intimate touch with the needs of the industry.

When you bring your pumping problems to Worthington you are therefore assured of recommendations based upon a knowledge of actual requirements and unbiased by any limitation in type of pump or of manufacturing facilities.

Pumps — Oil and Gas Engines — Compressors — Condensers
Feedwater Heaters — Oil and Water Meters

7669-4

WORTHINGTON PUMP AND MACHINERY CORPORATION
115 BROADWAY, NEW YORK CITY BRANCH OFFICES IN 24 CITIES

OIL COUNTRY GOODS SHOW LITTLE DECREASE IN BUYING

By B. E. V. Luty

PITTSBURGH, Pa., Oct. 18.—According to the evidence of delivery promises of the pipe mills, there has been little decrease lately in the volume of buying of oil country goods. That there has been some decrease is not denied. Delivery promises now run in many cases five to six weeks on sizes up to 8-inch and three to four weeks on larger sizes. Quite likely, however, these promises will be fully kept, if not anticipated, while last summer many shipments were decidedly later than the promises.

The probability seems to be that when the decrease in buying does come it will be sharp, the theory being that buyers are forehanded now in placing orders to make sure of getting deliveries well before the end of the year.

Merchant pipe demand has been tapering off somewhat in the past few weeks, but is still fairly heavy. Reasonably prompt deliveries have been made right along, and shipments are now quite prompt.

Pipe mills are still running at above 90 per cent of full capacity. In lap weld almost all the capacity is operating, even some high cost capacity. In butt weld the operation is at, say, 75 to 80 per cent of full.

Prices Very Firm

Prices are very firm all along the line, mill prices being rigid, while there is scarcely any shading in the secondary market at any points.

The Steel Corp.'s unfilled obligations increased by 51,174 tons in September, against an August decrease of 60,187 tons. Shipments were approximately the same in the two months, at about 88 per cent of rated capacity, and the increase in bookings indicated is about 10 per cent. This month, with shipments and general line buying promising to be about the same as in September, there should be a considerable increase in unfilled obligations on account of rail business. The annual retail buying movement is now in full swing for 1927 deliveries, a total of considerably more than 1,000,000 tons being likely to be put under cover at the various mills.

Steel ingot production showed an inconsequential decrease from August to September. Mill operations are at approximately the same rate this month and in general it may be said that August, September and October show steel production at about 85 per cent of assumed capacity, July having been distinctly lower. Steel production through September showed nearly 11 per cent increase over that in the same period last year, but as there was a bulge in November and December last year, not expected to be duplicated this year, the full calendar year will probably show slightly less than 10 per cent gain over last year, which was a record year by an inconsequential margin. As it is natural for steel tonnage to increase, this year's gain over last year is not particularly remarkable.

Sheets Holding Easily

The sheet market is holding easily at the advanced prices that recently became effective, 2.40 cents on blue annealed, 10 gauge, 3.10 cents on black, 24-gauge, and 3.95 cents on galvanized, 24-gauge. Rarely are sheet prices absolutely rigid and there is probably a little shading now, as usual. There is buying of some consequence despite the fact that there was very heavy buying on the eve of the advance.

Merchant steel bars continue to hold their own, even the largest buyers being unable to cover at under 2.00 cents, while on carloads and other small lots 2.10 cents is getting to be the usual figure. Much the same condition appears in shapes. Over four months ago mills undertook to advance the three heavy rolled products, and the effort is succeeding fairly well in shapes and bars, while plates seem to be given up as a hopeless case at their old 1.90-cent price.

The valley pig iron market shows considerable price stiffness, with recent advances in Bessemer and foundry, but demand shows scarcely any improvement. The market is $19 on Bessemer, $17.50 on basic and $18 to $18.50 on foundry iron.

Heavy melting steel scrap recently declined 50 cents, to a range of $17 to $17.50, and is now a shade easier, dealers being able to pick up some small lots at $16.75.

EASTERN FIELDS

(Continued from Page 71)

sand No. 10 on the J. F. Lowther farm. It is a duster.

Southeastern Ohio

The southeastern Ohio fields had nothing better than light wells in the shallow sand territory. In the deep sand territory there is a little decline in operations, except in the gas territory in Guernsey County. This county has more wells drilling and starting than any other county in southeast Ohio.

In Section 5, Lawrence Township, Washington County, R. H. Henning & Co. have completed in the second Cow Run sand a second test on the Albert Huntsman farm good for 10 bbls. a day. In the southwest quarter of Section 36, Pultney Township, Belmont County, Chester L. Wise has completed a second test on his own farm good for 2 bbls. a day in the Berea grit.

In Section 16, Knox Township, Columbiana County, the Yaggi heirs have drilled a test on their own farm into the Berea grit good for 2 bbls. a day. In Section 22, Lawrence Township, Washington County, the Ohio Oil Co. has started to drill another test on the David Hendershot farm.

Good Wells in Hocking County

In the southeast quarter of Section 24, Washington Township, Hocking County, the Gordon Oil Co. completed and shot in the Clinton sand No. 5 on the Robert Stone farm. The well produced 157 bbls. the first 24 hours. The location is 700 feet west of No. 3 on the same farm. In Section 18, Prairie Township, Holmes County, the Pure Oil Co. completed in the same formation a second test on the Isaac F. Snyder farm. The well produced 50 bbls. the first 24 hours.

Morgan County

In the northwest quarter of Section 21, York Township, Morgan County, the Pure Oil Co. completed and shot in the Berea grit a test on the E. H. Fye farm, good for 7 bbls. a day. In the Fisher Pool, Section 29, Alexander Township, Athens County, Cooke and others have a 2-bbl. pumper in the Berea grit at a second test on the E. R. Walker farm.

In the southwest quarter of Section 12, Washington Township, Hocking County, the Hope Construction & Refining Co. is drilling a second test on the Edward Hickey farm.

Week-End Completions

The southeastern Ohio fields made a very poor showing at the week end. On Mitchells Run, Section 18, Newton Township, the Washington County, the Henderson Oil Co. completed and shot in the first Cow Run sand No. 25 on the George F. Stephan farm good for 5 bbls. a day. In Franklin Township, Section 3, Bishop Hazelett and others completed No. 6 on the Martha Gutridge farm, a very light pumper in the Berea grit.

In the southwest quarter of Section 12, Washington Township, Hocking County, the Gordon Oil Co. has drilled in a test on the F. S. Chambers farm, showing for a fair producer in the Gordon sand. In Lot 12, Hardy Township, Holmes County, the East Ohio Gas Co.'s test on the C. F. and Viola M. Groffs farm is through the Clinton sand and dry. Only a little gas was found in this well.

In the southwest quarter of Section 1, Fallsburg Township, Licking County, the Goshen Oil Co. has completed in the

ANY TOOL ANY TIME ANY PLACE

OUR WAREHOUSE LOCATIONS

Located at points selected because of their convenience for serving you, you will find the Bridgeport plant. At many of these stores you will find not only drilling and fishing tools and wire rope but a complete stock of contractors' supplies.

Our warehouses and branch stores provide for instant and immediate delivery of any tool, at any time and at any place. These stores were located on purpose for that purpose. Each store has men on tower at all times capable of being of great assistance to you if you use them and you will find every man ready and willing and anxious to give you a better service, quicker delivery than you can get anywhere else on earth.

THE BRIDGEPORT MACHINE COMPANY

OIL WELL DRILLING AND FISHING TOOLS
WICHITA, KANSAS

THE BEST TOOLS---from one end of the string to the other

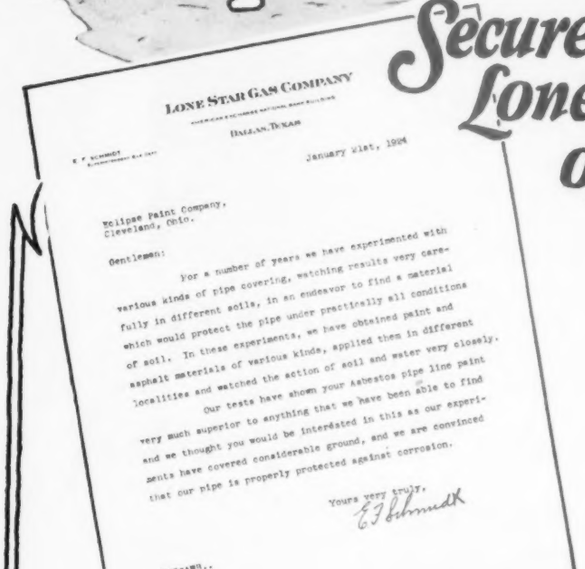
BRANCHES

Wichita, Kans.* Russell, Kans.* Gorham, Kans. El Dorado, Kans.
Winfield, Kans. Tulsa, Okla. Stroud, Okla. Depew, Okla.
Wetumka, Okla. Tonkawa, Okla. Garber, Okla. Braman, Okla.*
Pawnee, Okla.* Ranger, Tex. Panhandle, Tex.*
Isom, Tex. Breckenridge, Tex. Marietta, Ohio

**A complete stock of contractors' supplies carried in stock at these points.*

Eclipse Save-A-Line

Securely Protects Every Mile of Lone Star Gas Co.s Hundreds of Miles of Pipeline



LONE STAR GAS COMPANY

DALLAS, TEXAS

January 21st, 1924

Eclipse Paint Company,
Cleveland, Ohio.

Gentlemen:

For a number of years we have experimented with various kinds of pipe covering, watching results very carefully in different soils, in an endeavor to find a material which would protect the pipe under practically all conditions of soil. In these experiments, we have obtained paint and asphalt materials of various kinds, applied them in different localities and watched the action of soil and water very closely.

Our tests have shown your Asbestos pipe line paint very much superior to anything that we have been able to find and we thought you would be interested in this as our experiments have covered considerable ground, and we are convinced that our pipe is properly protected against corrosion.

Yours very truly,
E J Schmidt

EJS:AWH..

A Few of the Larger Users of Save-A-Line

The Shell Company, The Gulf Pipe Line Company, Associated Pipe Line Company, Humble Pipe Line Company, California Petroleum Company, Wilmington Gas Company, Public Service Electric & Gas Company.

Their experience is your Guarantee of satisfaction.

The Lone Star Gas Company, Dallas, Texas, is known throughout the industry as an exceptionally shrewd and careful buyer. Therefore, the fact that they definitely selected SAVE-A-LINE for protecting their pipe lines against corrosion, *after numerous severe tests were made* by their pipe line construction department, is a noteworthy testimonial of superiority.

Eclipse SAVE-A-LINE forms a thick, elastic film or coating, reinforced with asbestos fibre, which contracts and expands with the pipe and is unaffected by moisture, alkali, lime or electrolysis. It can be applied without heating and by inexperienced labor.

Let us know your requirements. We will be glad to send you sample and quote you prices. If you have any particular difficulties peculiar to your soil or climate, our Service Department is at your disposal.

The Eclipse Paint & Mfg. Co.

Cleveland, Ohio, U.S.A.

DALLAS DENVER SAN FRANCISCO
NEWARK PHILADELPHIA

Berea grit No. 3 on the C. E. VanWinkle farm. The first 24 hours after shot it produced 22 bbls. In the northwest quarter of Section 21, same township, Ster C. Brown has completed No. 18 on the N. A. Holland farm, good for 18 or 20 bbls. a day.

Morgan County

In the northwest quarter of Section 28, York Township, Morgan County, the Pure Oil Co. has completed in the Berea grit No. 5 on the Gilbert Bush farm good for 8 bbls. a day. The Ohio Fuel Supply Co. has completed a second test on the Thomas Miller farm, in Section 16, Hanover Township, Ashland County. The well produced 8 bbls. the first 24 hours after completed. It was shot in a stray sand 600 feet above the Clinton sand.

In the northwest quarter of Section 23, Green Township, Hocking County, the Consolidated Oil & Gas Co. completed in the same formation a test on the Charles Bartlow farm. It is a 10-bbl. pumper.

In the Fisher Pool, Section 25, Waterloo Township, Athens County, the Arkansas Fuel Oil Co.'s test on the Edward Hawk farm is not good for more than 3 bbls. a day in the Berea grit. In Section 9, Perry Township, Monroe County, William McCue has a very light pumper in the Keener sand at a test on the C. S. Buchanan farm.

Licking County

In the southeast quarter of Section 22, Fallsbury Township, Licking County, the Leonard Oil & Gas Co. has completed and shot in the Berea grit No. 5 on the Hoover Brothers' farm good for 12 bbls. a day. In the southwest quarter of Section 20, same township, the same company has started to drill another test on the M. R. Moran farm.

Noble County

In the northeast quarter of Section 18, Noble Township, Noble County, George E. Jewell and others have completed in the Berea grit No. 3 on the Otis Davis farm. It is a very light pumper. In the southeast quarter of Section 29, Enoch Township, F. R. Michael & Co.'s No. 7 on the L. A. and Ella Harper farm is also a light pumper in the Buell Run sand at a total depth of 425 feet.

In Section 15, Perry Township, Licking County, the Preston Oil Co. is swabbing 55 bbls. a day from its No. 3 on the E. Ray and Otto M. VanWinkle farm. In the same section and township, the Murphy Oil Co. is pumping 70 bbls. a day from No. 3 on the Wheeler Mossholder farm. Both wells were completed last week.

Late West Virginia

On Seaman Fork of Reedy Creek, Reedy district, Roane County, West Virginia, the Heck Oil Co. has completed No. 4 on the J. W. Conley farm good for 20 bbls. a day. The location is 1,400 feet northeast of No. 3 on the same farm. On Breeden Creek, Harvey district, Mingo County, 4,000 feet north of the Old Colony Oil Co.'s No. 14 on the Logan Canel Coal Co.'s property, the Red Jacket Coal Co. has now completed in the Maxon sand a test on its own property and is a gasser good for 4,000,000 feet. This well was reported as showing for a gasser a few days ago.

In Grant district, Pleasants County, L. P. Bickel & Son have completed No. 3 on the A. V. Hammett farm. It is showing for a light pumper in the salt sand. In Washington district, C. B. Watson is drilling a second test on the H. Strusberg farm.

In Henry district, Clay County, the Virginian Gasoline & Oil Co. has completed a second test on the Brown, Swan, Goshorn & O'Dell tract estimated good for 10 bbls. a day in the Big Injun sand. On Green Creek, Harper district, Roane County, the Central Oil & Gas Co. has completed the rig for a test on the John Huffman farm.

In Marshall County the Decem Development Co. completed a test on the Frank Baker farm, dry in all sands. In Otter district, Braxton County, the Pittsburgh & West Virginia Gas Co.'s test on the Harriet Friend farm is a gasser in the salt sand.

In Sheridan district, Calhoun County, the Chemical Oil Co.'s No 4 on the D. M. Miller farm is a gasser in the Big Injun sand. In Paw Paw district, Marion County, the Owens Bottle & Machine Co. has drilled down to fifth sand a test on the Alpha Tennant farm. It is a gasser.

Cabell County

In McComas district, Cabell County, J. S. Farr and others have a gasser in the Berea grit at a test on the C. A. Wetherholp farm. In Jefferson district, Kanawha County, the Tampico Oil & Gas Co.'s test on the George K. Miles farm is a duster. In Church district, Wetzel County, the Pittsburgh & West Virginia Gas Co. has a Gordon sand gasser at No. 3 on the O. J. Bartrug farm.

In Murphy district, Ritchie County, the Hope Natural Gas Co.'s test on the H. P. Camden farm is dry and abandoned. In McClelland district, Doddridge County, the Norbell Oil & Gas Co.'s test on the M. Underwood farm is also a duster and has been abandoned.

Drilling and Starting Tests

In Liberty district, Marshall County, the Manufacturers Light & Heat Co. has started to drill a test on the S. H. and M. Earnest farm. In the same district, the same company is building a rig on the W. A. Evans farm. In Center district, Gilmer County, the Carnegie Natural Gas Co. is rigging upon the J. T. Moss farm. In the same district, Okey Bennett and others are due in the Maxon sand on the James F. Shock farm.

Braxton County

In Birch district, Braxton County, the Pittsburgh & West Virginia Gas Co. has started to drill on the J. L. Cummings farm. In Otter district, the same company is drilling on the G. B. Howell farm. In Lee district, Calhoun County, McIntosh & Scott are building a rig on the Noah J. Whitsell farm. In Birch district, Braxton County, the Ohio Fuel Oil Co. has part of the rig material at a location on the L. O. Hamrick farm. In Duval district, Lincoln County, the United Fuel Gas Co. has started to drill on the Horse Creek Land & Mining Co.'s tract. In Jefferson district, the Columbia Gas & Electric Co. is drilling a second test on the L. R. Sweetland farm.

Shut Down at Wayne County Test

In Credo district, Wayne County, the Jeffrey DeWitt Insurance Co. has drilled to a depth of 2,826 feet at a test on its own property and shut down for orders. In Carroll district, Lincoln County, the Laurel Development Co. is drilling a second test on the W. W. Lucas farm. In the same district, the Cambridge Gas Co. is starting to drill on the W. W. Reynolds farm. In the same district, the Grant Gas Co. is building a rig on the Everett and P. Vickers farm. In Church district, Wetzel County, the Carnegie Natural Gas Co. is drilling in the top of the 30-foot sand on the J. C. Hixenbaugh farm. In Murphy district, Ritchie County, the Hope Natural Gas Co. is rigging up on the J. W. Gorrell farm, and made a location on the Edwin R. Tibbs farm.

In Troy district, Gilmer County, the Pittsburgh & West Virginia Gas Co. has started to drill on the N. B. Woofter farm. The same company is drilling on the E. D. Fulton farm. In Union district, Tyler County, the Hope Natural Gas Co. is hauling rig material to a location on the Sarah J. Martin farm. In Smithfield district, Roane County, the United Fuel Gas Co. has started to drill on the J. G. Keffer farm. In the same district, Godfrey L. Cabot has locations on the Keffer heirs' farm and L. M. Kelly farm. In Geary district, the United Fuel Gas Co. is rigging up on the J. M. Armstead farm. In Reedy district, the Heck Oil Co. has a rig up on the M. Williams farm. In Geary district, the United Fuel Gas Co. made a location on the Nannie Shafer farm. In the same district, J. P. and L. W. Young have made a location on the Eliza Kirkhart farm.

Ritchie County

On Hughes River, Murphy district, Ritchie County, the Valley Gas Co. has the rig completed for a test on the E. Baker heirs' farm. On Breeden Creek, Harvey district, Mingo County, located

—the predominant in ball value

[Made of MO-LYB-DEN-UM Steel]

Work—steady hours of pumping, longer life, fewer replacements, greater production at a lower cost—is the only way you have of judging ball value.

And the greater the hours of service, the greater the value you place on a ball.

But—no ball can give you any greater service than is built into it.

It is a known fact that Strom MO-LYB-DEN-UM Balls have a far greater work-value built in them—they are built to do more.

They are manufactured by an exclusive process, from MO-LYB-DEN-UM steel, noted for its intense hardness and toughness—ten times that of chrome. Uniformly hardened and held accurate, as to size, to within plus or minus, .00005 and sphericity to within .000025—*therefore all Strom Balls render a like service.*

It is because of this better manufacture—this better work-value—that most of the balls used as standard equipment are Strom MO-LYB-DEN-UM.

It is because of this—that most of the larger producers standardize on Strom MO-LYB-DEN-UM Balls for replacement.

And it is because of this—that most supply jobbers carry Strom in all standard sizes, because they know that Strom MO-LYB-DEN-UM Balls will more than satisfy the most exacting operator.

Strom Steel Ball Co.

The largest exclusive steel ball builders

612 Garfield Street

Oak Park (*Suburb of Chicago*) **Illinios**

Yours for the asking

(The Valuable Table Below is Reproduced from Page 18)

Brand	Brinell Hardness		Melting Point	Liquidation	Specific Gravity	Weight Ounces per Cubic Inch	Proper Pouring Temp.	Deformation of Cylinder 1¼" dia. x 1½" high at 70° F.		
	At 70° F.	At 212° F.						At 1,000 Lbs.	At 5,000 Lbs.	At 10,000 Lbs.
Genuine "A"	19.0	12.8	437° F.	390.5° F.	7.34	4.24	595° F.	.0009	.001	.015
ElectricRailway	19.8	14.0	460° F.	395° F.	7.39	4.27	606° F.	.0000	.0015	.0140
Oil Engine	24.4	15.7	502° F.	701.6° F.	7.40	4.31	916° F.	.0000	.0005	.015
Trojan	27.4	11.9	508.6° F.	439.6° F.	7.73	4.46	700° F.	.0005	.0025	.0104
Paultless A	21.0	9.8	504° F.	555° F	9.005	5.20	683° F.	.0016	.0060	.0140
Gas Engine	24.1	11.7	464.0° F.	500° F	9.75	5.08	625° F.	.0010	.0030	.0230
Eagle "A"	25.5	11.9	469.4° F.	500° F.	10.04	5.8	625° F.	.0020	.0080	.0620
Standard #4	14.2	6.4	470.8° Br	509° F.	10.07	6.17	654° F.	.0025	.0170	.8850

ENGINEERS and scientists have been employed to make exhaustive tests to determine accurately the data contained in this valuable new book. Every user of babbitt metal should have a copy, for it is full of accurate and valuable information. A copy will be sent to you with our compliments upon receipt of the coupon below.

HOYT BABBITT

Hoyt Metal Company
ST. LOUIS
Chicago · New York · Detroit

HOYT METAL COMPANY
Boatmen's Bank Bldg. Date .....
St. Louis, Mo.

Please send me without obligation a copy of your new book, "Babbitt Metal Data".

Name .....
Street Address .....
City ..... State .....
F

4,000 feet north of No. 14 on the Logan Cannel Coal Co.'s tract, the Red Jacket Coal Co. has started to drill a test on its own property. On the same stream and in the same district, the Old Colony Oil Co. has started to drill No. 19 on the Logan Cannel Coal Co.'s property. On Jenneys Creek, 1,500 feet northeast of the Old Colony Oil Co.'s test on the Thomas Colwell farm, the same company has started to drill a second test. In Union district, Marshall County, the Spider Oil & Gas Co. is rigging up on the Anna Joghum farm. In Liberty district, the Natural Gas Co. of West Virginia has made a location on the F. W. Moore farm. In Grant district, Wetzel County, the Richwood Oil Co. has completed a rig on the John Mills tract. In the same district, the Shimwell Oil & Gas Co. is hauling rig timbers to a location on the W. J. Price farm.

Southwest Pennsylvania

On McNay Run, Franklin Township, Greene County, the Greensboro Gas Co. has completed in the fifth sand a test on the Fay Headley farm. It is a gasser good for 500,000 feet. In Richhill Township, the Carnegie Natural Gas Co.'s No. 3 on the J. L. Barney farm is a gasser in the Gordon sand. In Center district, the Greensboro Natural Gas Co.'s test on the J. J. Mitchell farm is a duster.

Charles Garrison & Co.'s second test on the Hannah M. Shough farm, in Gilmore Township, is a gasser in the Big Injun sand. In the same township, the Shough Lease Oil & Gas Co. has a fifth sand gasser at a test on the George W. Shough heirs' farm. In Springhill Township, J. H. and Lee McNichols have a gasser in the Gordon sand at a test on the George Fonner farm.

On Walters Run, Washington Township, the Philadelphia Oil Co. has completed in the 50-foot sand No. 7 on the Maria Jacobs farm. It is showing for a 10-bbl. pumper.

MICHIGAN FIELDS

(Continued from Page 68)

sand, but has had no showing worth while of oil, and may attempt to drill down for a test of the Saginaw sand.

Other Developments

The Saginaw Prospecting Co.'s wildcat well on the E. G. Rust farm, 1 mile northeast of Saginaw City, on the North Washington Road to Bay City, in Section 9, Buena Vista Township, has been cased with 8-inch, and struck top of the Marshall sand at 735 feet. This well is being closely watched, for if it proves a commercial producer it will add thousand of acres to development.

A. A. Smith, Jr., is reported to have reached a depth of 700 feet at his test on the Peter Forster farm, Section 26, Monitor Township, Bay County, the second test to be made in that county.

J. H. Shaltry and others are starting a well on the J. C. Brechtelsbaur lots, in Corrollton Township, on Schaefer Street. Myron E. Lee is drilling No. 2 on the J. Conrad Brechtelsbauer property on the Shattuck Road, east of the Hermansau Road.

Jack Hendricks is starting a well for local capital on Niagara Street, near the Passolt Soap Works plant. This is the first well to be drilled in the present development in the vicinity of old wells drilled some 13 years ago.

Leasing Activities

Anson Henry Russell, well-known oil operator of Cleveland, Ohio, secured a lease on the 3-acre tract of Mrs. Addie Conley in Carrollton Township.

Arthur H. Horton, trustee, secured leases on the Ada Mahoney and Mr. and Mrs. J. P. Mahoney 45 acres, and the Mr. and Mrs. Jerry Mahoney 40 acres, in St. Charles Township.

Saginaw Prospecting Co. leased a plat of land owned by Elton D. Hesse of Arrowsmith, Ill., in Buena Vista Township.

Ray Webb and J. F. Marschant leased the Steve Lacko lot in Carrollton Township, also a lot owned by Wolfgang Brechtelsbauer.

Harold L. Gordon secured a community lease on six lots owned by Bridget Collison and others in Carrollton Township.

The Valley Oil & Gas Co. secured a lease within the proved field of 1 acre on the Henry Ulrich farm, Carrollton Township.

The Kipp Oil Co. filed for record a lease in Carrollton Township of a half lot owned by Josephine Lipinski.

H. Randall Wicks, trustee, filed for record four leases in Taymouth Township, as follows: Mr. and Mrs. John Schmidt, 80 acres; Mr. and Mrs. Michael Tithner, 40 acres; Mr. and Mrs. August Schulke, 80 acres, and Mr. and Mrs. Joel B. Stephens, 17 acres.

The Consolidated Coal Co. has entered the Saginaw Field, and officials of the company have filed for record several leases covering a total of 800 acres in Buena Vista and Blumfield Townships.

Arthur H. Horton leased from Mr. and Mrs. Jay C. Lockwood of Toledo, Ohio, a block of 640 acres in St. Charles Township.

George H. Sinclair, Henry J. Mowman and Edwin R. Louden, Canton, Ohio, secured a lease on a plat of ground in Carrollton Township owned by Mr. and Mrs. John M. Wacher.

First Fire in Field

The Saginaw Field had its first fire, and while it lasted was spectacular. It happened at the well of Matthew Heppler and others on the Mrs. C. Heppler property, along the Shattuck Road west of the Hermansau Road. The well reached the pay sand in the Berea and was shot, bringing forth quite a volume of gas, which was ignited, threatening to destroy the drilling outfit, but by the quick work of the Saginaw fire department the fire was extinguished with only a slight damage. This well got the sand at 1,827 feet and drilled 18 feet in the sand, and will make an average producer for the field.

The Saval Development Co.'s second well on the George Spatz farm, on Hermansau Road near Oak Street, Carrollton Township, was given a 60-quart shot, and shortly after the hole cleaned itself and started to flow, putting out about 10 bbls. in approximately 90 minutes. Top of Berea at 1,812½ feet and drilled 20 feet in the sand. From the first flow on Friday to Saturday morning it put 67 bbls. in tank, making it among the good wells of the field.

The Sun Oil Co.'s No. 1 on the C. J. Rab farm, in the southwest quarter of Section 11, Saginaw Township, was given a shot and shortly filled up with 500 feet of fluid, and will make only a fair producer.

HYDROGEN SULPHIDE IN THE TEXAS PANHANDLE

(Continued from Page 40)

and do not produce the type of irritation to be described later.

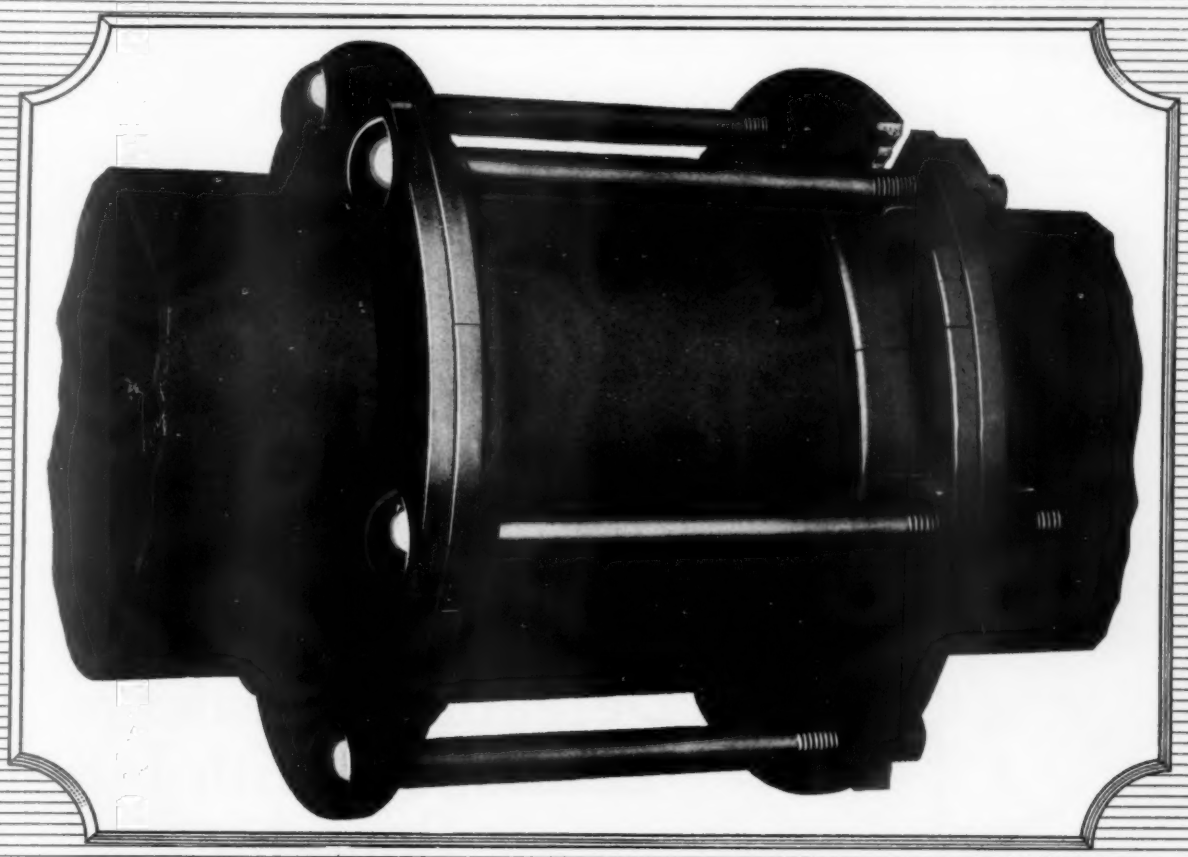
Casing Programs.—Many companies carry the 8¼-inch casing down to the "big gas" zone, and when a suitable "shell" or hard stratum is found, either make a formation shut-off or cement this string of casing. The hole for the 6⅝-inch casing is then drilled through to the oil-bearing formation. Some companies land the 10-inch casing on top of the gas zone and carry the 8¼-inch string of pipe down to the oil. However, the general procedure of drilling is the same whether 6⅝-inch or 8¼-inch casing is carried down to the oil zone.

Bradenheads.—After the 6⅝-inch casing is landed (or 8¼-inch, if this is used) a stuffing-box casinghead, more commonly referred to as a "bradenhead," is placed between the 8¼-inch and 6⅝-inch casings (or between the 10 and 8¼-inch).

Hazardous Working Places

In consequence of the present inadvisability of loading the holes with water or mud, large volumes of gas are allowed to escape to the air while drilling through the "big gas" producing strata.

In the Cellar.—This gas is liable to collect in the confined space of the derrick cellar, and therefore men are in the greatest danger of exposure to harmful atmospheres during the time that they are putting on the bradenhead. Many



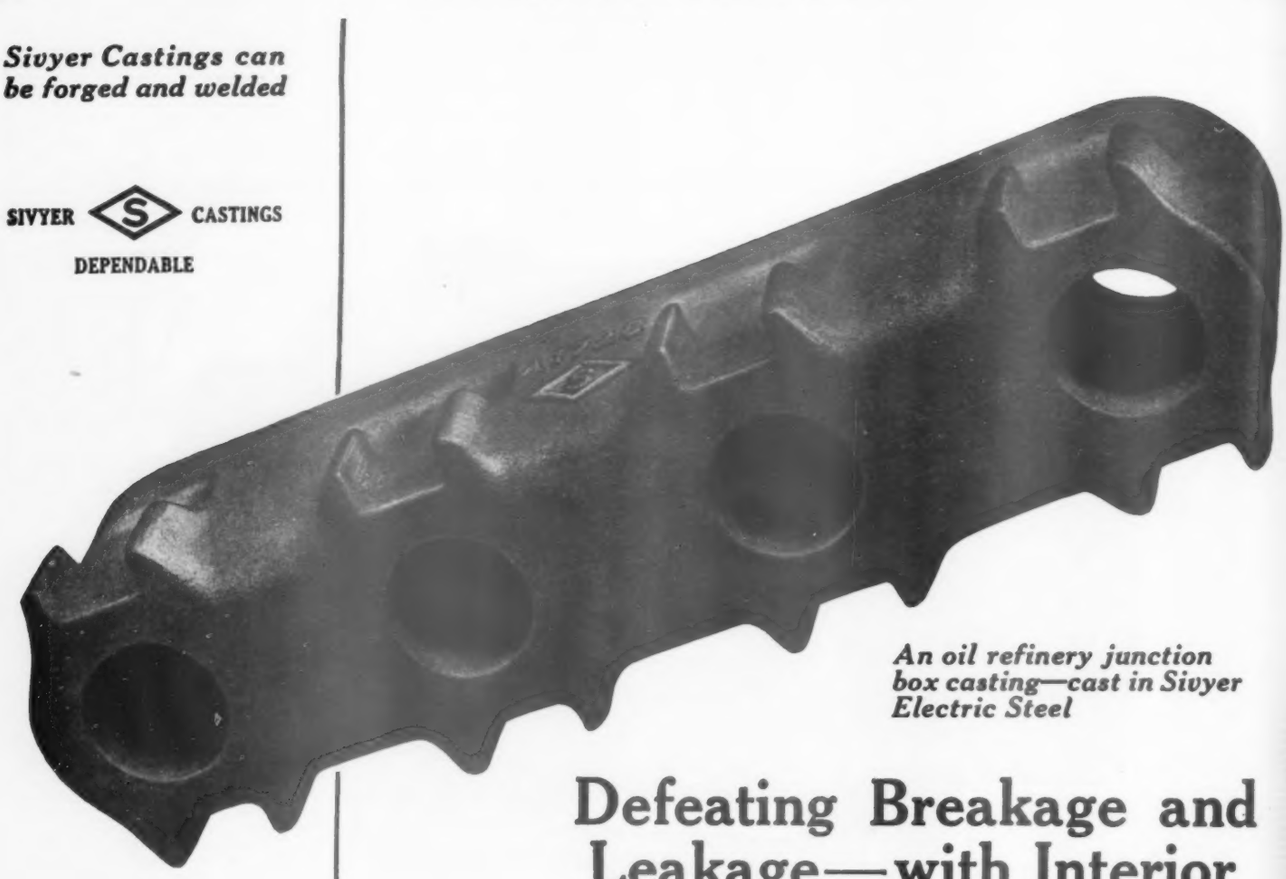
DAYTON
No 9
COLLAR LEAK CLAMP

THE DAYTON PIPE COUPLING CO.
DAYTON, OHIO

Sivyer Castings can be forged and welded

SIVYER S CASTINGS

DEPENDABLE



An oil refinery junction box casting—cast in Sivyer Electric Steel

Defeating Breakage and Leakage—with Interior Soundness

For those parts that must withstand extreme pressures and strains, manufacturers are logically turning to Sivyer Electric Steels. The junction-box casting shown above is such a part. In service it is called upon to withstand severe hydraulic pressures—that can range as high as 2000 pounds. To defeat leakage and breakage under such terrific pressures calls for an exceptional interior soundness. The metal must be non-porous and it must be free from those hidden defects that cause failure under strain. Sharply varying and complicated metal sections add to the difficulties of providing close-grained, "shrink-free" castings. Where casting demands are so rigid, manufacturers naturally turn to Sivyer, as was done in this case. Careful foundry practice, plus the close-grained, non-porous texture of Sivyer Steel provides assurance against breakage and leakage in service. The user of the junction box illustrated says this of the 337 castings Sivyer has shipped him: "Up to the present time we have not found a single leak in testing any of the castings."

Sivyer is often given the responsibility of casting new and untried parts and of developing new methods to eliminate trouble on old parts. Many parts formerly made in other metals and by other methods have been replaced by Sivyer Steels — at a decided advantage to the casting user.

If you are having trouble with parts failing in service — with high rejections — excessive machining, or if you are developing new and untried parts — Sivyer Electric Steels and Sivyer methods may furnish the solution for your problem. We will gladly make recommendations on any part without obligating you. Merely SEND BLUE PRINTS.

Mid-Continent Office
1415 F & M Bank Building
Fort Worth, Texas

SIVYER STEEL

SIVYER STEEL CASTING COMPANY, MILWAUKEE

men have received severe cases of conjunctivitis ("gas eyes") or have been overcome by the gas and lost consciousness while at work making the necessary connections in the derrick cellars. One of the first wells in this area caused 31 men to be overcome by gas, before the bradenhead was finally placed.

On the Derrick Floor.—The derrick floor is also a hazardous place to work if a well is making hydrogen sulphide gas. The drilling crews, casing crews and bradenhead crews are exposed to the hazard in this working place if proper precautions are not taken. Many drillers reported cases of "gas eyes," but no cases were on record where men had been overcome by the gas while working on the derrick floor.

Concentration of Hydrogen Sulphide

The average results of analyses of samples collected from 20 different wells within a radius of 10 miles from Borger, show that:

1. In the "granite wash" wells neither the gas coming from the "big gas" stratum above the oil nor the gas coming with the oil contains more than 0.01[3] per cent hydrogen sulphide. (Also no distinct odor of hydrogen sulphide was detected). This amount appears to be negligible from the safety standpoint.

2. In the "lime" wells both the gas coming from the "big gas" producing stratum above the oil and the gas coming with the oil has a hydrogen sulphide content between 0.20 to 0.60 per cent by volume. There appears to be a regular variation between different parts of the

Men wearing hose masks coming out of cellar of well making H_2S gas after putting on bradenhead connections.

field. The gas from a well approximately 10 miles southeast of Borger, on what probably is the edge of the "lime," contained 0.20 per cent hydrogen sulphide; this well was not making oil and is beyond the present radius of active drilling in the field. Wells within an estimated radius of 3 to 7 miles southwest, west, northwest, north and northeast of Borger contained 0.45 to 0.55 per cent; and wells east of Borger in the Dixon Creek region contained 0.55 to 0.65 per cent. Two samples from wells north of the Canadian River, the one approximately 5 miles and the other approximately 10 miles northwest of Borger showed 0.46 and 0.26 per cent respectively. Both of these wells were in the "lime."

From these data it appears that hydrogen sulphide occurs in the gas from all lime wells within the area examined.

Occurrences and Type of Symptoms

"Granite Wash" Wells.—No symptoms of hydrogen sulphide poisoning were observed among the men working around the gas coming from "granite wash" wells though they were exposed to gas-air mixtures under gas concentrations and working conditions similar to those of the lime wells. It will be remembered that the gas from these wells contained less than 0.01 per cent hydrogen sulphide.

However, exceedingly high concentrations of this gas will dilute the air below the point that will sustain life. The addition of 25 to 30 per cent of gas to ordinary air will reduce the oxygen content to 15 or 16 per cent. The low limit of a safe atmosphere for the average man is 15 to 16 per cent of oxygen[4]. The physiological action of atmospheres markedly deficient in oxygen is very rapid. There are no significant warning symptoms before unconsciousness occurs.

The injurious effects of hydrocarbon gases are well known. The symptoms of dizziness, numbness in the legs, drowsiness, or possible exhilaration, preceding unconsciousness are usually recognized.

Accidents due to atmospheres low in oxygen and high in hydrocarbon vapors are liable to occur in the derrick cellars or other confined spaces at "granite wash" wells unless the men take proper precautions. Recovery is usually rapid if the victim is immediately rescued and taken to fresh air. Artificial respiration should be given if breathing has stopped or become impaired.

"Lime" Wells.—Two distinct types of symptoms occur in the men working in the gas around the "lime" wells. One of these is irritation of the eyes and respiratory tract following a relatively long exposure; the other is unconsciousness attending a very short exposure.

Eye and respiratory tract irritation is very prevalent among the men working in the gas from "lime" wells. It mainly occurs among drillers, tool dressers and men making bradenhead connections. These men are exposed in varying degrees from the time of drilling into the gas until the last casing is set and the bradenhead connection made, and even after that there may be sufficient gas leaking around the bottom of the casing or coming with the oil to constitute an exposure.

The eye irritations range in severity from mild conjunctivitis to swelling and bulging of the conjuctiva, photophibia, and temporary blindness. In many cases they are extremely painful and occasion a large amount of lost time. Often drilling is suspended due to the entire drilling crew being affected and unable to work. The same condition prevails among the bradenhead crews, the closing in of wells having frequently been delayed several days. It is a rather common occurrence to find men around the wells with their hats drawn down over their eyes or wearing dark glasses to protect them from strong light, and many appear daily at the emergency hospitals for treatment. One prominent doctor in the field told the writers that he estimated that he had treated more than 1,000 cases of conjunctivitis during the first six months of 1926. However, the effects are temporary and readily yield to treatment.

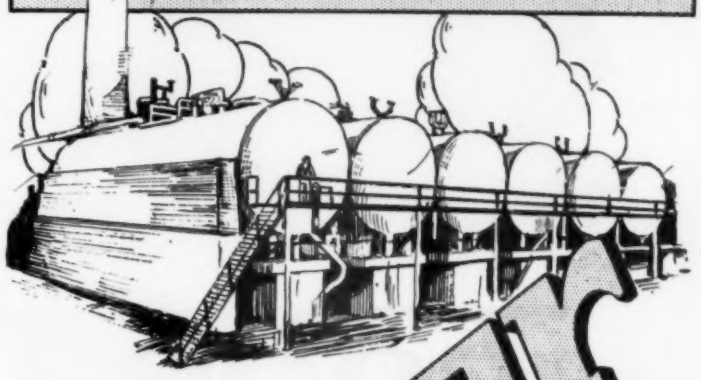
A large number of cases of respiratory irritation also occur, although not as frequently as the conjunctivitis. The respiratory irritations of the nose, throat, and lungs often lead to rhinitis, laryngitis, and bronchitis. In some cases there is coughing and a feeling of fullness in the chest.

The recorded cases of unconsciousness have occurred to men making the bradenhead connections in the cellar, or doing similar work when the gas is escaping in that place. The time of exposure preceding unconsciousness is very short, often but a fraction of a minute, and there is no significant warning symptom. The victim is often aware that he is in strong gas and has a sudden choking sensation but usually becomes unconscious before he can get away. Although there have been many of these cases, no fatalities have occurred. This is due to quick action on the part of fellow-employes who have rescued the victims and removed them to the open air. Recovery in air is rapid, and the men usually suf-

[3] 0.01 per cent was the lower limit of positive detection by the method of analysis used.

[4] Burrell, G. A., and Oberfell, G. G., Effects of Atmospheres Deficient in Oxygen on Small Animals and on Men. Tech. Paper 122, Bureau of Mines, 1915, 12 pp.

SERVING *the* REFINERY



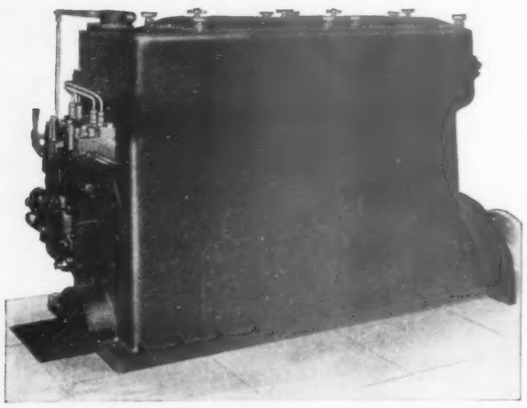
POWER PIPING

FOR EVERY OIL FIELD NEED

YEARS of experience in meeting the peculiar and practical problems of the industry are in back of "Power Piping" service. Refinery needs, no matter how complex, can be put up to "Power Piping." Small jobs of bendings, fittings or welding—or the larger, more difficult tasks of system fabrications or assembly—all get the same prompt attention and the careful study and thought so necessary to lasting satisfaction.

Write us on your problems.

Power Piping Co.
Pittsburgh, Pa.



THE FOOS

Diesel Engine

Operated During June, 99.63%

WHAT a remarkable record! Yet that is a quotation from a letter written us July 14, 1926, by Mr. H. C. Barnard, Vice President of Sinclair Oil & Gas Company. Mr. Barnard says:

"Our Covington Plant No. 6 which contains 15 165's and 1 125, operated during June 99.63%.
"Our Burbank Plant No. 9, containing 8 165's operated 99.83% during June.
"Our oldest plants, which are No. 2 at Drumright and No. 3 at Shamrock, have averaged 99.5% since their installation nine years ago. All of these units are running with the original cylinders. The Drumright Plant is not fully loaded but the Shamrock plant has been overloaded according to the compressor rating during almost its entire life, and is at this time carrying an overload."

And don't overlook the reference to overloads. Why not get all the facts about the performance of Foos Type V Diesels. Write today for Foos Bulletin G-85, describing the Foos Type V engine.

THE FOOS GAS ENGINE CO.
SPRINGFIELD, OHIO, U. S. A.

For 39 Years Foos Has Manufactured High Quality Internal Combustion Engines Exclusively. Types for All Gas and Liquid Fuels.

THE FOOS GAS ENGINE CO.,
Springfield, Ohio, U. S. A.

Please send me by return mail, copy of your bulletin G-85, on the Foos Type V.

Name .....

Address .....

fer no marked ill effects, being able to go back to work if necessary. In a few cases there is nausea and headache, and in others, body injury has occurred due to falling on pipe clamps or fittings.

Big Lake Field

The average surface elevation of this field is about 2,700 feet above sea level. Gas is encountered in two zones. The upper zone contains a "sweet" gas in large quantities together with a relatively small amount of oil. This is in a "brown sand" at a depth of about 2,400 feet. Some of these wells are known to have flowed as high as 87,000,000 feet per day from this upper zone. The second zone contains a "poison" or "sour gas" in small quantities, usually estimated to be 100,000 to 200,000 feet daily per well. This gas occurs with the oil in the large oil-producing zone at about 3,000 feet below the surface. The intermediate strata permit casing off the upper gas, and with the exception of producing enough for fuel in the field, it is entirely closed off. The production of the sweet gas for fuel is essential because the lower gas is too corrosive and poisonous for use in gas engines, boilers and heating appliances.

All wells in the Big Lake Field are drilled with cable tools. The subsurface conditions of this structure are now well

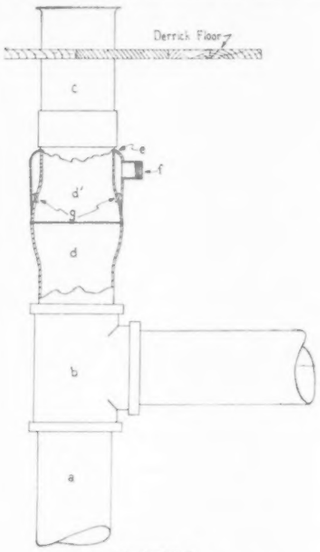


FIGURE 2.
Sketch of snuffer and casing jet to aid in expelling gas through exhaust line.

known. Accordingly, before drilling into the upper or large volume of gas, the hole is loaded with mud or water until that stratum is drilled through and the gas is cased off. The primary reason for loading the holes in this field is to prevent the possible loss of the well through the escape of uncontrollable amounts of gas—this has happened in at least one well.

Concentration of Hydrogen Sulphide

The "poison gas" is present with the oil but fortunately not in large quantities. If the same volume were present as in the Panhandle Field, the effect would be disastrous. Analyses of eight samples of the poison gas collected from eight different wells, oil separators, or flow tanks into which the wells were producing, show amounts of hydrogen sulphide ranging from 8.1 to 10.5 per cent. The concentration appears to vary with the location of the wells. Those wells in the extreme eastern part of the field produce the larger amount, and those in the southwest the lesser.

The sweet gas contains less than 0.01 per cent hydrogen sulphide and no health hazards exist other than those described under the "granite wash" gas of the Panhandle Field.

Occurrence and Type of Symptoms

Symptoms of the types described in detail in discussing the Panhandle Field also occurred in the Big Lake Field. However, the field is older, the men have had more experience with the gas, and the drilling campaign is much less extensive. Also the volume of sour gas is relatively small, so that few symptoms were observed at the time of making this investigation. Many rumors, which were confirmed by conversation with the physicians, indicated that in the earlier days of the field the conditions were similar to those now prevailing in the Panhandle. The men are now cognizant of the dangers and have learned to avoid the gas.

Four deaths are alleged to have occurred in the past from acute poisoning. Before the dangers of the gas were well known and before the depth of the poison gas zone was accurately determined, a well was unexpectedly "drilled in" one night, and the gas killed both the driller and tool dresser— the only men present at the time. They were found dead on the derrick floor by a foreman but because of the large accumulation of irrespirable gas, he could not recover the bodies at that time. Accordingly, he started for help and had proceeded but a short distance when the gas became ignited and set the well and derrick on fire.

In two other cases men died from exposure to hydrogen sulphide gas while gauging flow tanks.

In conversation with gaugers and switchers it was learned that many rabbits and birds are found dead around the wells and tanks. The men stated that these dead animals are usually found after a still oppressive night when the barometer is low and there is little or no air movement. One man stated that he had collected a pile of more than 100 dead animals. The writers wished to observe these, but due to a heavy rain which flooded that portion of the field on the previous day, they could not be found.

McCamey Oil Field

The McCamey Oil Field is situated about 35 miles west of the Big Lake Field in Upton County, Texas. It is a new field and appears to be in about the same stage of development as the Texas Panhandle, although a great deal smaller in area.

Although some gas-producing strata are encountered above the oil the poison gas in this field occurs with the oil in a lime formation. The top of this zone is approximately 2,100 feet below the surface. The gas is present in relatively small quantities but the concentrations of hydrogen sulphide are high, averaging about 5 per cent.

All wells are drilled with cable tools. Usually, the holes are started with 10-inch casing to shut off any top water that may be present. The 8¼-inch casing is landed at about 1,550 feet, and the 6⅝-inch casing is carried down to the top of a lime formation which is found near the 2,100-foot level. The wells are completed at a total depth of about 2,175 feet, and most of them produce from open hole. Few, if any of the wells have the casing cemented, and "bradenheading" between the 6⅝ and 8¼-inch casings is not common practice.

Occurrence and Type of Symptoms

Several men reported that they had become nauseated while working on top of flow tanks and one gang of men connecting up a field tank were affected by the gas. No eye symptoms were noted at the time of the investigation, but a doctor in the field gave information that all of the usual types of symptoms had occurred.

Recently a gauger died from exposure to the gas on top of a flow tank. A well "came in" at about 7 o'clock in the morning. There was no control head on the 8¼-inch casing, and the well flowed "wild" for about eight hours. The initial production was estimated to be at the rate of 10,000 bbls. per day. It is reported that because water was coming with the oil, the well was flowed into open storage for some time after it was brought under control.

The gauger lived in a tent approximately 100 yards from the well. About 3 o'clock in the morning of the second day he went on top of a flow tank to

THE PURE OIL CO

A Seal of Superiority

SPECIAL
Crank Case Flushing Oil
85 to 100 @ 100 Vis.
1¾ to 3 Color
Petrolatum

Rigid enforcement of precision in specifications gives Petroleum Products of Pure Oil the distinction of superiority.

There is never any guess work. Car after car is uniform.

This has won for the name a high respect with inspection authorities.

And it commends itself to the confidence of buyers of all Petroleum Products.

Wire Phone or Write

THE PURE OIL COMPANY
U. S. A.

Independent—and successful, through unvarying high quality in all its products.

SALES OFFICES
CHICAGO
NEW YORK
PHILADELPHIA
PITTSBURGH
COLUMBUS, O.
MINNEAPOLIS
TULSA, OKLA.
CHARLESTON, W. VA.
WARREN, PA.
ATLANTA, GA.
BEAUMONT, TEX.
PENSACOLA, FLA.

REFINERIES
MUSKOGEE, OKLA.
ARDMORE, OKLA.
SMITH'S BLUFFS, TEX.
HEATH, OHIO.
MARCUS HOOK, PA.
WARREN, PA.
CABIN CREEK JCT., W. VA.

An Oil Man from the East —was visiting in California

—nothing new about that—except this Oil Man phoned us from his hotel—and said he had read our extravagant claims regarding the saving of 20% to 80% on gasoline treating costs through the use of the—

MASTER MIXER HEAD

A member of our Engineering Department immediately called upon the Oil Man from the East and convinced him of the accuracy, efficiency and economy of the MASTER MIXER HEAD—the result of the conference was that several of these appliances were forwarded to his refinery—each unit carries our positive guarantee of performance.

Moral: Another soul made happy—more profits for the stockholders!

Petroleum Appliance Company

1419 West 8th St. **Los Angeles**

THE OIL INSURANCE ASSOCIATION

PROVIDES FOR REAL FIRE INSURANCE FOR THE OIL INDUSTRY

The Oil Insurance Association is in its eighth year of successful operation, with 100% performance record testifying to the dependability, thrift and speedy and complete satisfaction of its service.

OIL INSURANCE ASSOCIATION MEMBER COMPANIES

Aetna Insurance Co., Hartford Conn.
Alliance Insurance Co., Philadelphia, Pa.
Allied Underwriters Agency, Hong Kong
American Insurance Co., Newark, N. J.
American Alliance Ins. Co., New York, N. Y.
American Central Insurance Co., St. Louis, Mo.
American Eagle Fire Ins. Co., New York, N. Y.
Automobile Insurance Co., Hartford, Conn.
Ben Franklin Underwriters, Pittsburgh, Pa.
Boston Insurance Co., Boston, Mass.
Caledonian Insurance Co., Edinburg, Scotland
California Insurance Co., San Francisco, Calif.
Camden Fire Insurance Association, Camden, N. J.
Carolina Insurance Co., Wilmington, N. C.
Central States Fire Ins. Co., Wichita, Kans.
Citizens Insurance Co., St. Louis, Mo.
City of New York Insurance Co., New York, N. Y.
Columbia Insurance Co., Jersey City, N. J.
Commerce Insurance Co., Glens Falls, N. Y.
Commercial Union Assurance Co., London, Eng.
Commercial Union Fire Ins. Co., New York, N. Y.
Commonwealth Insurance Co., New York, N. Y.
Concordia Fire Insurance Co., Milwaukee, Wis.
Connecticut Fire Ins. Co., Hartford, Conn.
Constitution Underwriters, Springfield, Mass.
Continental Insurance Co., New York, N. Y.
County Fire Insurance Co., Manchester, N. H.
Eagle Star & British Dom. Ins. Co., Ltd., London, Eng.
East & West Insurance Co., New Haven, Conn.
Federal Union Insurance Co., Chicago, Ill.
Fidelity-Phenix Fire Ins., Co., New York, N. Y.
Fire & Marine Underwriters, Hartford, Conn.
Firemen's Fund Ins. Co., San Francisco, Calif.
Firemens Insurance Co., Newark, N. J.
Firemens Underwriters, Newark, N. J.
Franklin Fire Insurance Co., Philadelphia, Pa.
Girard Fire & Marine Ins. Co., Philadelphia, Pa.
Girard Underwriters, Philadelphia, Pa.
Glens Falls Insurance Co., Glens Falls, N. Y.
Great American Ins. Co., New York, N. Y.
Hanover Fire Insurance Co., New York, N. Y.
Harmonia Fire Insurance Co., Buffalo, N. Y.
Hartford Fire Insurance Co., Hartford, Conn.
Home Fire & Marine Ins. Co., San Francisco, Cal.
Home Insurance Co., New York, N. Y.
Hudson Insurance Co., New York, N. Y.
Imperial Assurance Co., New York, N. Y.
Insurance Co. of North America, Philadelphia, Pa.
Insurance Co. of State of Pennsylvania, Philadelphia, Pa.
Jersey Fire Underwriters, Newark, N. J.
Liverpool & London & Globe Ins. Co., Liverpool, Eng.
Mechanics Insurance Co., Philadelphia, Pa.
Mechanics Underwriters, Philadelphia, Pa.
Mercantile Insurance Co., New York, N. Y.
National Ben Franklin Fire Ins. Co., Pittsburgh, Pa.
National Fire Insurance Co., Hartford, Conn.
National Liberty Ins., Co. of America, New York, N. Y.
National Security Fire Ins. Co., Omaha, Neb.
Newark Fire Insurance Co., Newark, N. J.
New Hampshire Fire Ins. Co., Manchester, N. H.
New York Underwriters Ins. Co., New York, N. Y.
Niagara Fire Ins. Co., New York, N. Y.
North British & Mercantile Ins. Co., London, Eng.
Norwich Union Fire Ins., Society, Norwich, Eng.
Old Colony Ins. Co., Boston, Mass.
Palatine Insurance Co., London, Eng.
Patriotic Insurance Co. of America, New York, N. Y.
Pennsylvania Fire Ins. Co., Philadelphia, Pa.
Philadelphia Fire & Marine Ins. Co., Philadelphia, Pa.
Phoenix Assurance Co., London, Eng.
Phoenix Insurance Co., Hartford, Conn.
Providence Washington Ins. Co., Providence, R. I.
Queen Insurance Co., New York, N. Y.
Reliance Insurance Co., Philadelphia, Pa.
Rochester Dept. of Great American, New York, N. Y.
Royal Exchange Assurance Co., London, Eng.
Royal Insurance Co., Ltd., Liverpool, Eng.
Scotch Underwriters, Edinburg, Scotland
Scottish Union & National Ins. Co., Edinburg, Scotland
Security Insurance Co., New Haven, Conn.
Sentinel Fire Insurance Co., Springfield, Mass.
Springfield Fire & Marine Ins. Co., Springfield, Mass.
St. Paul Fire & Marine Ins. Co., St. Paul, Minn.
Star Insurance Co. of America, New York, N. Y.
Sun Insurance Office, London, Eng.
Svea Fire & Life Ins. Co., Gothenburg, Sweden.
Superior Fire Ins. Co., Pittsburgh, Pa.
Travelers Fire Insurance Co., Hartford, Conn.
Union Assurance Society, London, Eng.
Union Insurance Society of Canton, Hong Kong
United Firemen's Insurance Co., Philadelphia, Pa.
Urbaine Fire Ins. Co., Paris, France
Westchester Fire Ins. Co., New York, N. Y.
World Fire & Marine Ins. Co., Hartford, Conn.

Complete details of the Oil Insurance Association may be obtained from your insurance agent or broker.

AMONG THE PURPOSES FOR WHICH THE OIL INSURANCE ASSOCIATION WAS ORGANIZED ARE:

To enable oil operators to secure sufficient dependable insurance to adequately protect their interests.
To furnish property holders and those controlling oil business expert engineering and inspection service, so methods of insuring this class may be standardized, and efficient fire protective devices installed and properly maintained, thereby stabilizing the business to the point which will enable insurance companies generally to accept the class at fair cost and under equitable policy rates.
To make available the most business-like insurance arrangement for all oil companies.

OIL INSURANCE ASSOCIATION - H. M. Carmichael, Mgr. - 209 W. Jackson Blvd., Chicago

gauge its contents while another man opened the gate valve. As soon as the gauger opened the gage hole cover, a puff of gas escaped from the opening, and he fell on the roof of the tank. The other man heard the noise of the fall, and the unconscious gauger was immediately taken off the tank, but there is some question as to whether or not he was taken entirely out of the gas area. Effort was made to revive him and a doctor was summoned, but the man died after being unconscious for about one hour and a half.

As has been stated, the concentration of hydrogen sulphide in the "sour" gas in the Texas Panhandle Field ranges from approximately 0.20 to 0.60 per cent by volume. Table 1, copied from the Bureau of Mines Bulletin 231, shows that an exceedingly toxic atmosphere can occur in a mixture of this gas with air. If the gas contained only 0.20 per cent hydrogen sulphide, it would require a mixture of equal parts of gas and air to give a concentration of 0.1 per cent hydrogen sulphide. In this case unconsciousness would result about as quickly from lack of oxygen as from the hydrogen sulphide present. On the other hand, with the higher concentrations found in the Texas Panhandle (0.60 per cent) a toxic atmosphere could be created containing 17 to 18 per cent oxygen, a respirable amount.

A mixture of one part of the Big Lake gas (which contains about 10 per cent of hydrogen sulphide) in 100 parts of air would be highly toxic. The McCamey gas is also exceedingly toxic, the minimum mixture with air causing immediate unconsciousness being in the ratio of 1 part gas to about 50 parts air.

Analyses of a large number of samples of gas-air mixtures collected on the derrick floor, under the floor, in the cellar, and in various other places show that the workmen are often exposed for long periods to concentration of 0.01 and 0.02 per cent hydrogen sulphide in air, sometimes to 0.03 and 0.05 per cent, and occasionally to 0.10 per cent, or higher. In several of the working places where samples of the gas were taken, cases of eye irritation were observed and in one instance irritation of the respiratory tract resulting in a fullness in the lungs and coughing.

Analysis of gas collected from a cellar where two men had become unconscious a few hours before showed 0.10 per cent hydrogen sulphide.

Table 1 shows that the concentrations and symptoms found in these oil fields parallel those found in previous work, and the detailed descriptions of symptoms in this report are almost identical with those described on pages, 60-62 and 73-77, of Bureau of Mines Bulletin 231.

Treatment

Conjunctivitis.—Consultation with physicians in these oil fields who have been treating these cases advise that the following treatment for conjunctivitis has given excellent results—not a single case failing to respond to treatment, where the patient has done his part by following instructions.

1. Relieve pain by drops of butyn, or butyn and epinephryn, or in severe cases halocain.
2. Follow with campho borate. One doctor varies this practice by using boric acid ointment.
3. Drops of colloidal silver iodide or (neo-silvol) or argyrol (5 to 10 per cent).
4. Throughout the treatment use hot compresses alternating with a cold compress if pain is too great.

Rhinitis, Laryngitis, and Bronchitis.—Irritations of the nose, throat and lungs are treated symptomatically. One doctor has had good success in the use of "anespray" for the throat.

Subacute Poisoning.—All of these treatments should be under the supervision of a competent physician, and although the symptoms may appear trifling, they should receive medical attention at once due to the complications which often arise. Although the application of hot and cold compresses in themselves will relieve pain, in case of conjunctivitis, and irrigation with boric acid will be helpful in slight attacks, the difficulty of obtaining sterile compresses and eye cups together with the difficulty of self diagnosis as to the severity of the attack, makes "home remedies" and "home treatment" inadvisable. If a man had a natural tendency toward eye or respiratory weakness, his exposure to hydrogen sulphide gas might result in a complicated condition that would prolong the recovery period. This makes it especially imperative that all cases should be treated by a competent physician.

It is reported that in the Panhandle district some practitioners of little experience are dispensing solutions containing cocaine to be used as an eye wash in cases of gas conjunctivitis. This is a very dangerous treatment because the pain is relieved temporarily, and men will go into the hydrogen sulphide gas repeatedly when they should be receiving proper care. The continued application of such eye washes would undoubtedly result in corneal ulcers and in the permanent injury to the patient's eyes.

Acute Poisoning

In many cases of acute hydrogen sulphide poisoning there is an immediate cessation of respiration. Thus any treatment to be effective must be given immediately and so simple that it can be given by fellow-workmen. There is no time for summoning aid before beginning to resuscitate the victim. In view of this the following treatment is outlined.

1. Get the patient into fresh air.
2. Give artificial respiration[7], if breathing has ceased, become markedly labored, or impaired.
3. Summon a doctor.
4. Give inhalations of oxygen, if available, through an inhaling apparatus similar to that described in Bureau of Mines Bulletin 231[8].

If breathing has ceased or ceases during treatment, artificial respiration should be continued until breathing resumes, or at least for a period of three hours.

Precautions

Many cases of irritation are the result of carelessness, negligence, or lack of knowledge of the danger on the part of either the employe or the employer. Men often stand needlessly on the leeward side of the hole or in the stream line flow of the gas. Workmen should be instructed to avoid the gas whenever possible by working on the windward side of the outlet from which the gas is escaping. Under no condition should a man stand directly over a thief or gauge hole on a tank. Three out of five reported deaths due to hydrogen sulphide gas in these fields, have occurred to gaugers on top of tanks.

As in all safety work, education in avoiding the hydrogen sulphide hazard is attended with many difficulties, and an added responsibility is placed upon foremen and superintendents in fields where this gas occurs. Instructive bulletins regarding the hazard and the necessity of keeping out of the gas as much as possible should be issued, and men in charge of work should show by their own example what precautions should be taken when in the gas.

Protective Equipment

Employers should furnish the following protective equipment and insist that men working in atmospheres containing hydrogen sulphide gas wear this equipment. The men should be instructed in the proper use of each type.

(1) For work in cellars, inside of tanks or other confined spaces, where high concentrations of hydrogen sulphide gas may occur, men should wear a hose mask equipped with a blower. Workmen should not enter these places without a safety belt and life line.

(2) For work on the derrick floor where concentrations of hydrogen sulphide are likely to occur, that will irritate the eyes, men should wear a gas-tight type of goggle. Goggles with water dams to overcome fogging of the lenses, and non-shattering glass are recommended.

(3) For gauging tanks and for other

[7]See Bureau of Mines manual of first aid instruction; the Schaefer or prone method, pp. 33-35.
[8]Bureau of Mines Bulletin 231, p. 79.

the New
BELLE CITY
BUILT
MODEL "E"

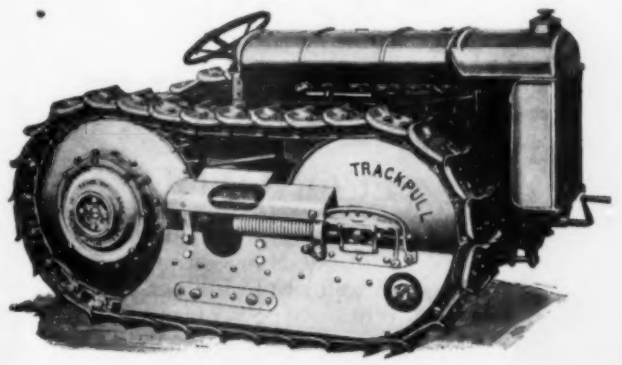
Full Timken Roller Bearing Equipment.

Driven and Steered through Multiple Disc Clutches running in oil and completely enclosed.

Automatic Spring Release and Front Spring suspension absorbs shocks and strains and prevents injury to working parts.

All working parts and adjustment easily accessible.

Increased Fordson tractive power under all conditions of soil and weather.



Ask your Ford Dealer or write

Belle City Manufacturing Company
Racine Dept EJ-10 Wisconsin

You Can Bet

on the equipment of these manufacturers—

American Well & Prospecting Co.
Boykin Machinery & Supply Co.
Hopper Machine Co.
Latex Iron & Steel Works, Inc.
Lucey Manufacturing Co.
Oil Well Supply Co.

Because they use

AMERICAN
HEAVY DUTY TYPE "C"
ROLLER BEARINGS

FENWICK-REDDAWAY MFG CO.
NEWARK, NEW JERSEY
IWANA
HAIR BELT

"IWANA"

HAIR BELT

ECONOMY!

In length of service and continuous operation, as well as the full percentage of power transmitted with minimum waste under all conditions. Specify "Iwana" —the economical belt.

FENWICK-REDDAWAY MANUFACTURING CO.
NEWARK, N. J.

Tulsa Representative: A. F. Campbell, P. O. Box 171

outside exposures including the derrick floor, where low concentrations of hydrogen sulphide gas exist that irritate the respiratory tract, suitable canister type masks should be worn.

Education in the limitations of the canister mask is essential. A canister mask is a filter, not a generator of oxygen, and is intended only for low concentrations of hydrogen sulphide.

Safety Limits[9]

"A man often may not be aware of the existing concentrations of the vapor * * *. Safety demands that such concentrations be determined by chemical analysis to assure that a canister mask is adequate before the man is jeopardized. If a chemist is not available or time for analysis is lacking, a hose mask * * * would be safer. A general safe rule is to wear a canister gas mask for protection * * * only where a man can work for a short time without respiratory protection."

Canister masks should never be worn in cellars and other confined places where concentrations of hydrogen sulphide are as high as in these fields. The writers talked with one man in the Panhandle Field who had been overcome by the gas in a cellar while wearing a canister mask. According to this man's statement, he had been in the cellar only a short time when the vapors broke through the filter. He was aware of this by the "taste" (odor), but before he could reach fresh air he fell unconscious (and injured his back in falling).

Canisters should be used in accordance with the instructions of the manufacturers as they are in a position to know the contents of the container and the safe working time that is permissible before discarding it. The life of a canister is relatively short.

The most serious objection to the canister type of mask at a derrick is the fact that men are liable to become careless about the length of time that a canister has been used or that some person will put on this equipment and go into a gassy cellar where it should not be used.

For gauging tanks, there is the objection to the canister mask that the wearer may feel himself immune from all danger and stand in the streamline flow of a highly toxic gas escaping from an opened vent or gauge hole.

One company is meeting these difficulties and maintaining proper supervision of its breathing equipment by having a first aid man in the field whose duty it is to take care of all breathing equipment and to be present at wells when the bradenhead is put on.

Objections to wearing hose masks on the grounds that they can not be used in the cellar when putting on the bradenhead are either due to lack of proper information or to biased opinion, as the writers observed this equipment in use at a number of wells. Men who have worn hose masks claim that their movements are not greatly hindered by the hose and they appreciate the protection given by this breathing equipment.

Care should be taken that the blowers are sufficiently far enough away from gas so that the men will be sure to have an uncontaminated supply of air. As a matter of extra precaution, a man should be designated to watch each hose and safety line and to keep them from becoming tangled.

Protective Measures for Derrick Floor

Use of the Steam Jet.—A number of companies operating in the Texas Panhandle have taken effective steps to keep harmful gas from accumulating on the derrick floor. Good results are obtained by the use of a steam jet connected to the casing.

Figure 1 shows a modified type of jet; a is the top of the 8¼-inch casing[10] which has been landed, or cemented, just above the gas zone; b, is an 8¼-inch screwed tee; c, the drilling nipple extending above the derrick floor, as convenient. A swaged or reducing nipple, d, (8¼ by 6⅝-inch) is screwed directly into the side opening of the tee. A 1-inch nipple, e, for steam connection, is welded into the side of the swage at its initial point of contraction and terminates near the center line of the swage. The jet is reduced with proper fittings to a ⅜-inch opening. The efficiency of the jetting action will be greatly impaired if the steam impinges against the side of the pipe. Therefore, the discharge of the jet should be concentric with the inside circumference of the exhaust pipe.

The exhaust will be more effective if the line is swaged back to 8¼-inch by using another 6⅝ by 8¼-inch swage, f. This will allow the gas and steam to expand more rapidly after passing the constricted throat at high velocity, and the expelling effect will be increased. A similar jet may be placed in the line at a distance of 20 or more feet from the first as at g, to further increase the expelling action. The exhaust line should be at least five joints in length so that the gas will not drift back on the workmen, and wherever possible, the outlet should be placed on the prevailing leeward side of the derrick. Elbows introduce line friction and should not be used unless necessary.

It is estimated that an ordinary ⅜-inch jet in a straight 8¼-inch diameter exhaust line (without swages) will handle 4,000,000 or 5,000,000 feet per day. High-pressure gas where available may be used in place of steam.

Use of the Drilling Plug

A suitable drilling plug should be kept in the mouth of the drilling nipple to aid in keeping the hydrogen sulphide gas off the derrick floor. The drilling crew of one well stated that in spite of the jet, "someone got a case of 'gas eyes' on every tour." This well was making no more gas than other wells where the derrick floor was kept free from gas by the use of a jet. Investigation showed that the jet had been placed at least 20 feet from the casing tee; the crew did not know whether or not the jet was concentric with the pipe; there were two 90 degree elbows in the exhaust line and the crew was not using a drilling plug. Every one of these points probably contributed to the unsuccessful operation of the jet.

The drilling plug should not be a makeshift affair, wrapped with sacking or other picked up material, but should be a tight-fitting plug, either solid or split, that will allow the free passage of the cable.

A Snuffer and Casing Jet.—Credit is due Earl Smith, assistant superintendent of drilling, Marland Oil Co. of Texas, Panhandle division, for devising a jet to be placed on the top of the casing itself, to aid in expelling the gas through the exhaust line, as shown in Figure 2. This device screws into the top of the tee, b, placed on the casing, a. For 8¼-inch casing, two 8¼ by 10-inch swaged nipples are used. The larger ends of the two swaged nipples, d, d' are welded together, giving an overall dimension of about 18 inches. A header, e, made of a bull plug, is welded to form a complete jacket, around the smaller end of the upper swage. A 2-inch outlet, f, for steam connection, is welded into this header. Sixteen ⅜-inch pipes, g, are placed at equal intervals around the periphery of the upper swage. These jet nozzles must be placed in such a way that the tools will clear them, and yet they should be pointed so that their stream lines will converge at a common center, several inches above the top of the side outlet of the tee. The dynamic force of this jet holds back the gas that would tend to escape from the top of the casing rather than through the exhaust pipe. This is an application of a fire snuffer but seems to work effectively in keeping gas off the derrick floor.

Other Devices

Any mechanical means that effectively keeps the gas off the derrick floor should be acceptable. A suggestion has come from the field that a steam-driven fan could be placed in the exhaust line. The writers saw no such installations but the working principle is feasible.

Use of the "Rat-Hole."—Some companies are making use of a "rat-hole" very

[9] Bureau of Mines Bulletin 231, p. 88.

[10] Throughout the following discussions one set of pipe size is used for the sake of uniformity but other sizes are just as applicable.

60 SEATS

The Waters Gauge Cock

A good gauge cock is one that always seats perfectly—that's why a Waters Gauge Cock is the favorite of the engineer who knows.

Stocked by all supply stores.

SMITH SEPARATOR COMPANY

Tulsa S Okla.

NEW YORK OFFICE—Export Representative:
Oil Field Equipment Co., 30 Church St., New York
Cable Address: "Oilfields," New York

CALIFORNIA OFFICE:
2039 East 38th St., Los Angeles, Calif.

LONDON OFFICE:
Perkins MacIntosh Petroleum Tool & Boring Co., Ltd., 25 Bishopsgate
Cable Address: "Oleborers," London

TEXAS OFFICES:
924 Post-Dispatch Bldg., Houston, Texas
1206 F. & M. Bank Bldg., Fort Worth, Texas

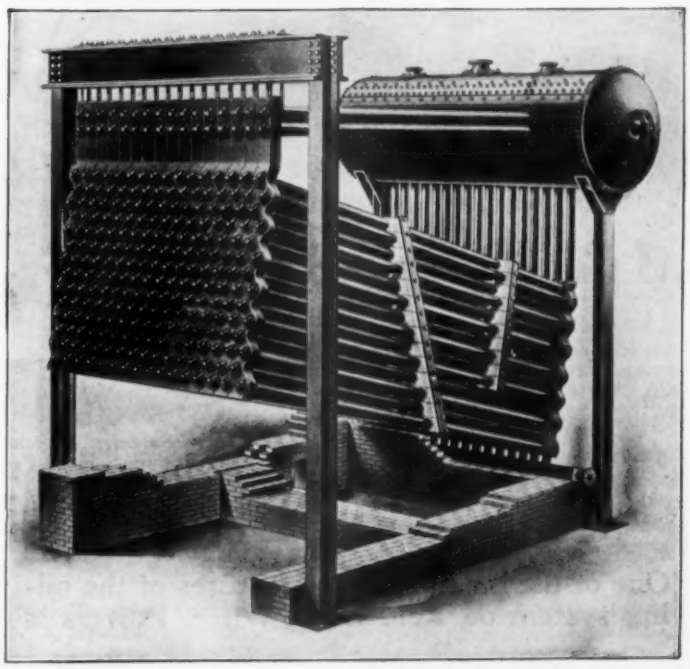
HIGH PRESSURE BOILERS

OIL STILLS, ACCUMULATORS, TANKS, CONDENSERS, HEAVY PLATE WORK

THE WALSH & WEIDNER BOILER COMPANY'S Sectional Header Water Tube Boiler is especially designed to meet the present day requirements of safe, high pressure Water Tube Boiler.

These Boilers are built in sizes up to 2,500 H.P. and for working pressures up to 500 lbs. per square inch.

Our plant is one of the largest in the United States and is equipped throughout with the heaviest and most modern machinery. We are therefore able to furnish Heavy Plate Steel Work of all kinds for Oil Refineries.



THE WALSH & WEIDNER BOILER COMPANY

Main Office and Plant: Chattanooga, Tenn.

Branch Offices:

New York, N. Y. | New Orleans, La. | Memphis, Tenn. | San Francisco, Cal. | Kansas City, Mo.
Houston, Tex. | Greenville, S. C. | Chicago, Ill. | Havana, Cuba | Mexico City, Mex.

"The Name to Know In Belting"

MURRUCO

A BELT that won't BOOTLEG, STRETCH or SLIP

To be sure of economical belting service, buy *Quality*. And *Quality* means *Murruco*.

Distributed by

PRODUCERS SUPPLY & TOOL CO.
Fort Worth, Texas

ARTESIA SUPPLY CO.
Artesia, New Mexico

FEDERAL SUPPLY & MACHINE CO.
Winfield, Kansas

Also Distribuors of

COMANCHE Heavy Duty Belting and Interstitched Belting
MURRUCO Air, Steam and Water Hose—Rotary Hose, and Packings—Rings—Bands

MURRAY RUBBER COMPANY—Factories—TRENTON, NEW JERSEY

Kansas City Branch
712 Delaware St., Kansas City, Mo.

Ketchum Bros.
1236 E. 8th St., Los Angeles, Calif.

Empire Supply Co.
440 Bryant St., San Francisco, Calif.

Chicago Branch
601 W. Randolph St., Chicago, Ill.

Patented September, 1913, June, 1924
Reid Type PB 20-Foot Band Wheel Power

For Lubrication, *Clean* Oil

One of the most desirable features of the oiling system on Reid Band Wheel Powers is that it is so designed that at no time is the oil exposed to contamination by dust or sand in the air.

This feature is explained in our Bulletin No. 29. Write us for it.

JOSEPH REID GAS ENGINE COMPANY, Oil City, Pennsylvania, U. S. A.

BRANCHES AND AGENCIES: Marietta, Ohio; Logan, Ohio; Newark, Ohio; Shreveport, La.; Charleston, W. Va.; R. B. Moore, Bolivar, N. Y.; Frick & Lindsay Co., Bradford, Penna., and Kentucky Distributors; S. R. Shoup, 724 Board of Trade Bldg., Los Angeles, Cal. Frick-Reid Supply Company, Tulsa, Okla., and Branches, Distributors for Oklahoma, Kansas, Texas, Arkansas and Wyoming. BRANCH SHOP, TULSA, OKLA.

EXPORT SALES REPRESENTATIVE: Oil Field Equipment Co., Inc., 30 Church St., New York City

advantageously to keep their men out of the stream line flow of the gas while changing drilling tools. The "rat-hole" should be 60 feet deep, lined with either 8¼ or 10-inch old casing, according to the size of drilling tools to be used in penetrating the gas zone. It should be drilled at the time of spudding in a well, and should always be used for breaking tool joints and for changing tools, when gas is coming out of the casing of the main hole. Where possible, it should be drilled on the prevailing windward side of the well and at a sufficient distance to prevent the men from working over the gas while changing tools. Only a few hours time are required to drill this auxiliary hole and its use will eliminate two drilling hazards:

1. Tools dropped in the hole from the surface, usually entailing a costly fishing job.

2. Tools dropped in the cellar with the possibility of breaking some of the bradenhead connections.

It will also prevent many cases of conjunctivitis and respiratory tract irritation.

Removal of the Derrick Siding. — To give further assurance that the derrick

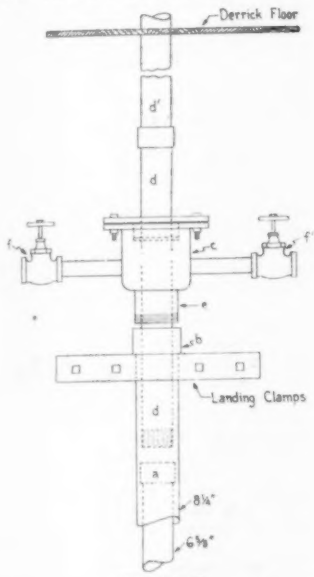


FIGURE 3.
Sketch showing revised method of putting on the "bradenhead."

floor will be as free from hydrogen sulphide gas as possible, the siding should be removed from the derrick up to the top of the first girt, from the time that this gas is encountered until it is cased off. The free passage of wind currents will greatly facilitate ventilation and help dilute the harmful concentrations[11].

Cellars and Runways

Although it has been recommended that all men wear hose masks while working in the cellar, an improved construction of the cellars and cellar exits or runways, which the men must use when putting on the bradenhead, will reduce the hazards caused by hydrogen sulphide gas in the Panhandle Field.

A survey of these working places throughout the field, indicates:

1. The cellars are generally too deep. They are often 16 feet deep measured from the surface of the ground. Ten feet is sufficient.

2. The cellar exits or runways are too steep and too narrow. Often they have insufficient head room and contain obstructions that may cause stumbling or make it difficult to remove a man from the cellar, if need arises. In many cases, improper cribbing has allowed the walls to bulge inward.

3. In most of the cellars, there is a 4-foot perpendicular drop from the bottom of the runway to the floor of the cellar. This condition is very objectionable because a workman may fall into this hole, either from being gassed or from slipping while at work. It would be very difficult to remove an injured person from the bottom of such a cellar, especially if the cellar were filled with gas.

At most wells in the Panhandle Field a cellar, 10 feet deep, measured from the surface of the ground, will take care of drilling needs. Where a greater depth is required in setting the conductor pipe and first string of casing above the gas zone, a substantial false floor should be constructed to cover the entire area of the cellar at a height suitable for putting on the bradenhead. The flooring should be of 2-inch plank and placed before the gas zone is struck and while the cellar is still free from gas. Cellars should never be less than 8 by 8 feet, lateral dimensions, in the clear. Men working in cramped quarters are always at a disadvantage.

Many companies are building two runways to their cellars. This practice is recommended for all wells in the gassy area, for this type of construction gives an opportunity for air currents to drive out the gas that may collect in the cellar.

Where permitted by the surface conditions and other factors that determine the plant layout, the best results will be obtained from a double runway by building the derrick with the runways parallel to the prevailing wind. One of the runways—preferably the one on the windward side of the derrick—should have a slope never more than 20 degrees from the horizontal (or 36.4 per cent). This provision is included in the safety orders of some states[12]. No pipe nor any other obstruction should ever be permitted in the 20 degree runway, it should be used exclusively for a man-way. The other, or ventilating runway, should be kept as free from obstructions as possible. It should be constructed with the idea that it, too, may be used as a manway, although it may be expedient to run a pipe or the extension handle to a control gate out through this runway.

Runways should be not less than 3 feet wide in the clear. The clearance between the floor of a runway and the derrick sills should not be less than 7 feet, and there should be ample head room throughout the entire length. The practice of nailing cleats or braces between posts at heights where a man coming out of the cellar is liable to strike them should not be permitted.

The runways should be properly cribbed or shored to prevent caving and should have a solid board walk, properly cleated to prevent slipping. They should terminate at the bottom of the cellar. Where this is not possible, the bottom of the slope should be on the same level as the false floor.

Putting on the "Bradenhead"

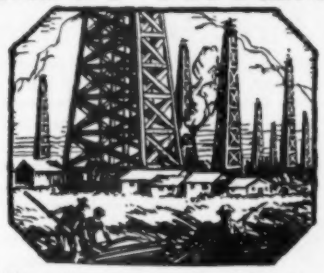
Although no man should go into the derrick cellar without wearing a hose mask, after the hydrogen sulphide gas has been encountered, (this fact has been pointed out under the heading of Protective Equipment), there are several operations by which the whole job of putting on the stuffing box casinghead (bradenhead) can be expedited and the time of working in the cellar with a mask considerably reduced.

The Ordinary Method.—Ordinarily, the bradenhead body, from which the follower and packing rings have been removed, is screwed to the top of the 8¼-inch "string" by using a piece of 8¼-inch casing screwed into an inner thread that is provided in the body. This "letting-in joint," is then backed out and, of course, the gas blows uncontrolled, filling the cellar as well as making working conditions on the derrick floor dangerous. The 6⅝-inch joint must be stabbed into its collar; the packing rings and follower adjusted and put in place; the piping to the side outlets connected;

[11]The writers are not unfamiliar with the low temperatures experienced in the Texas Panhandle during the winter season. However, the effectiveness of this method of helping free the derrick floor of gas has been demonstrated and should be listed as a preventive measure.

[12]Industrial Accident Commission, State of California, General Petroleum Industry Safety Orders for Drilling and Production, effective March 1, 1924. Order 1604, Cellar Exits.

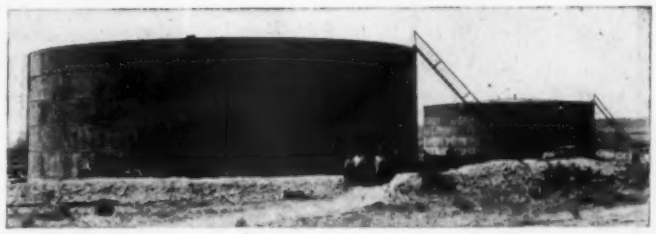
ASCO
STEEL
STANDS SUPREME



Our metallurgists are men who have had first hand experience in the Oil Fields. They have studied the performance of Oil Well Tools under the most trying conditions. Asco Steel is being produced to meet these conditions and the increasing demand has proven all that we claimed for it.

DISTRICT OFFICE:
502 Cosden Bldg., Tulsa, Okla.

THE ANDREWS STEEL CO.
NEWPORT KENTUCKY



Col-Tex Refining Co., Colorado, Texas

From Start to Finish in 60 Days

The two 31,000-barrel tanks shown above, and also one 20,000-barrel tank, one 5,000-barrel tank, two 6,700-barrel tanks, two 1,250-barrel tanks and one 500-barrel agitator were shipped, erected and ready for use within 60 days after the order was received.

This is an example of the service possible on Pittsburgh-Des Moines standard tanks which are carried in stock, fabricated and ready for shipment at both the Pittsburgh and Des Moines shops. These tanks are of standard heights and capacities, to meet practically all storage needs. Write or wire for estimates.

Tanks of special size are designed and fabricated to meet any requirements; send in your plans, or wire for an engineer to call.

Send for our Oil Tank Catalog No. 11

Pittsburgh-Des Moines Steel Company

913 Curry Bldg., Pittsburgh — 1227 Praetorian Bldg., Dallas — 915 Tuttle St., Des Moines
New York San Francisco Seattle Chicago Atlanta

Guaranteed,

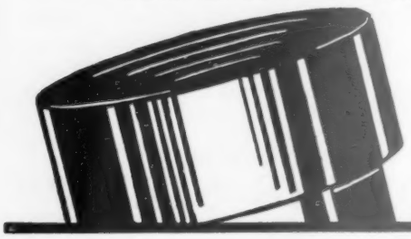
Inspected Pipe

with new threads and couplings

Save money with Greenspon's pipe—prices run 1/3 to 1/2 lower. You get guaranteed pipe, every length of which has been thoroughly inspected, equipped with new threads and fitted with new couplings. You will get years of service from it. Greenspon's casing, and ODEE pipe for gas lines, are likewise guaranteed! Ready at our yards in sizes to suit your needs, for immediate shipment.

Write today for prices—see for yourself how much you can save!

Jos. GREENSPON'S Sons



Iron & Steel Co.

SAINT LOUIS

Tulsa, Oklahoma

Fort Worth, Tex.

STOP Joint Leakage

Use Key Graphite Paste. It renders connections absolutely leakproof.

Oil is tricky—hard to keep from leaking through threaded joints. Its very nature causes it to search out irregularities in threads—to ooze through tightest connections unless perfectly sealed.

Key Graphite Paste stops all such leakage. It fills every crack and crevice. It seals all threaded connections as well as flange joints so that oil or its distillates cannot pass. Containing no oil itself, it is insoluble in oil and therefore remains permanently intact.

In addition, when applied to screw threads before coupling up, it lubricates as it seals, making joints easy to tighten and easy to break.

Key Graphite Paste is used throughout the oil industry. It is used by over 70% of the largest refineries in the United States. It successfully overcomes the most severe conditions in cracking stills where hot oil under pressure is noteworthily difficult to keep from leaking at joints.

Order by barrel, half barrel or in 60 lb. drums, 1, 3, 5 or 10 lb. cans.

Key Boiler Equipment Company
27th and McCasland Aves.
E. St. Louis, Ill.

KEY Graphite Paste

and all joints and bolts made tight under unfavorable conditions of high gas concentration.

A Revised Method.—One company at least has successfully used the following method of putting on the bradenhead. (See Figure 3.) After the 6⅝-inch casing has been landed or cemented, the distance between its top collar, a, and the top collar of the 8¼-inch casing, b, is measured. This distance is usually about 3 feet, and it takes only a few minutes for a man wearing a hose mask to make this correct measurement.

On the derrick walk, away from the flow of gas, the bradenhead, c, is made up complete, slip tight, on a 6⅝-inch "letting in" joint. The letting-in joint is made up of two nipples, d and d'. The length of the bottom nipple, d, depends upon the measurement taken in order that the top of the casing will be at the required height for putting on the control casing head and oil saver when the job is finished. An 8¼ by 8-inch nipple, e, is screwed into the bottom of the bradenhead, and 3-inch nipples are screwed into the side outlets with gate valves, f, f', on their outer ends. These valves are closed. A strong rope is given a hitch around the body of the bradenhead and the 6⅝-inch letting-in joint, so that the joint will not turn in the packing gland.

The bradenhead is then lowered into the cellar by means of the letting-in joint, and the nipple, e, is stabbed into the collar, b. As soon as this connection is made up—by turning the 6⅝-inch letting-in joint on the derrick floor all of the gas escapes to the air out of the top of d' above the heads of the workmen. Care must be taken to place the bradenhead on the letting-in joint in such a way that when the nipple, e, is made tight there will still be several inches clearance between the threads on the bottom of d and the collar a.

As soon as the nipple, e, is tight in its collar, pipes are screwed into the gate valves, f and f', and the lines laid a safe distance from the derrick. The side outlet gates are then opened. These outlets take much of the gas that has hitherto been going up the letting-in joint.

The rope hitch is removed from around the bradenhead and the 6⅝-inch letting-in joint, and the joint itself is stabbed into its collar, a, and screwed tight from the derrick floor. The proper stretch is then put in the 6⅝-inch string of casing, and the bolts on the bradenhead are made tight.

By this method, which was observed by the writers, the men are forced to work in the gas for only a short time. It is claimed that no injury to the packing will result from this method of putting on the bradenhead.

Use of a Spider

It would be advantageous to use a 6⅝-inch casing spider on top of the casing head, to assure the proper stretch of the 6⅝-inch string of casing, or a packing spider in place of the ordinary bradenhead. A packing spider has the combined advantages of a casing head and a spider. This piece of equipment also takes the place of a blowout preventer, and assures greater safety to men and the well than the present general practice.

Losses Due to Improper Methods

The necessity of taking precautionary measures of having at least two hose masks as part of the equipment on every casinghead job and of conducting the work according to a well-thought-out method is very important. This statement applies not only in regard to the safety of the men, but also for the uninterrupted progress of the well. Delays are always costly, and especially is this true where all operations are suspended at the well, due to lack of proper breathing equipment.

Many serious delays in the progress of wells were reported. One typical example was brought to the attention of the writers where an attempt was made to place the bradenhead in the usual manner. The men, working without masks, were unable to get the packing gland to shut off properly. The cellar became filled with gas and two men were overcome.

This accident occurred between 8 and 10 o'clock in the morning and it was not until late afternoon that the well was finally brought under control. In the meanwhile, a crew of 10 or 12 men, in addition to the drilling crew were "standing by"—for it was dangerous to do any work without proper protection. Two hose masks with blowers would have made it possible to go into the cellar and repair the damage within 40 minutes.

This investigation was made under the general supervision of R. R. Sayers, chief surgeon, and H. H. Hill, chief petroleum engineer, of the Bureau of Mines, at the request of oil companies operating in the three fields. The State of Oklahoma cooperated. Special mention should be made of the assistance given by H. P. Rue, associate refinery engineer, Bartlesville Experiment Station, Bureau of Mines.

CALIFORNIA FIELDS

(Continued from Page 64)

into production by Nos. 8 and 9, both of which have just passed the 3,600-foot level. The Richfield Oil Co. has just finished No. 1 McKeon and it is flowing at the rate of 900 bbls. a day from 3,984 feet, the oil being accompanied by approximately 300,000 feet of wet gas. Hogan & Lytle are just drilling out their No. 1 Huntington and it will undoubtedly be tanking oil within a few days.

Others Nearing Completion

The Wilshire Oil Co. should finish two new wells in the extension within the next few days, although No. 3 Huntington has apparently not secured a satisfactory water shutoff and may be delayed some time longer. The California Petroleum has seven potential producers, all of which should, barring mechanical trouble, be tanking oil within the next few weeks. The Petroleum Securities has six likely looking completions, every one of which is below the 3,600-foot level at the present time, and it is believed that this company will also list a fairly large number within a short time. The Julian Petroleum is running eight strings in the extension at present but, due to the fact that the company's deepest project is only down 3,350 feet, it will probably be around three weeks before any of these wells is ready for the production department.

The Standard's deep test in the northern part of the old field, No. 26 Bolsa, has just passed the 6,700-foot level and, while several promising showings were found higher up in the hole, the test at the present time does not look any too promising. It has not been definitely determined whether the showings encountered in No. 23 Bolsa were stringers from the old Huntington Beach Field or whether they are traceable to another structure in the vicinity of Sunset Beach to the north, at which point the General Petroleum will spud in a new wildcat within the next three weeks.

Ventura Avenue

The most interesting development in the Ventura Avenue Field during the week was the announcement that No. 1 Willett of the Petroleum Securities in the extreme southern part of the field had encountered what is believed to be the top of the deep sand at 5,599 feet. Following the find, the hole was carried down to 5,614 feet, at which point preparations were started to land a string of pipe before going any further. This well will undoubtedly receive close consideration during the next several weeks, since it is an outpost and not absolutely assured of commercial production. The outlook is, however, unusually promising and if a natural flow is secured it is almost a foregone conclusion that the company's No. 1 Orton, a few hundred feet away, will also result in a successful completion. The Shell finished drilling No. 9 Edison a few days ago and, while it has not yet actually been turned loose, the company is confident that it will be capable of yielding at least 3,000 bbls. a day from 6,231 feet. The Shell's next producer will probably be No. 14

STEARNS-ROGER

A Production Booster

Installations in the Panhandle report great increase over previous production.

One Company reports increase from 40 bbls. to 150 bbls. after 3 hours operation of the *"Hollow Bit"* Cleanout Tool.

The "Hollow Bit" Cleanout Tool

"Operates on the Beam"

Will Clean

Mud and Paraffin from the walls

Hard Sand and After Shots

Bridged Holes and Caves

(Patented)

Write for Bulletin 2652

THE STEARNS-ROGER MFG. CO.
ENGINEERS CONTRACTORS — DENVER, COLO. — DESIGNERS MANUFACTURERS

I-R Portable Compressors

Ingersoll-Rand Portable Air Compressors and Tools have been adopted by hundreds of contractors and companies as the most economical machines for use in the field.

These air compressors and tools have been found to give the reliable and efficient service so necessary where work is being done in the field, far from any repair shop or tool room. On jobs where interruptions must be avoided—where delays mean big losses—you will find Ingersoll-Rand Compressor Outfits at work.

High-Pressure Portable Compressors

Ingersoll-Rand High-Pressure Portable Compressors are designed to deliver air up to a pressure of 500 pounds per square inch. All materials used in their construction have been selected with the utmost care. All parts are made extra-rugged to withstand the high-pressure work of the fields.

INGERSOLL-RAND COMPANY
11 BROADWAY NEW YORK CITY

Offices in principal cities the world over

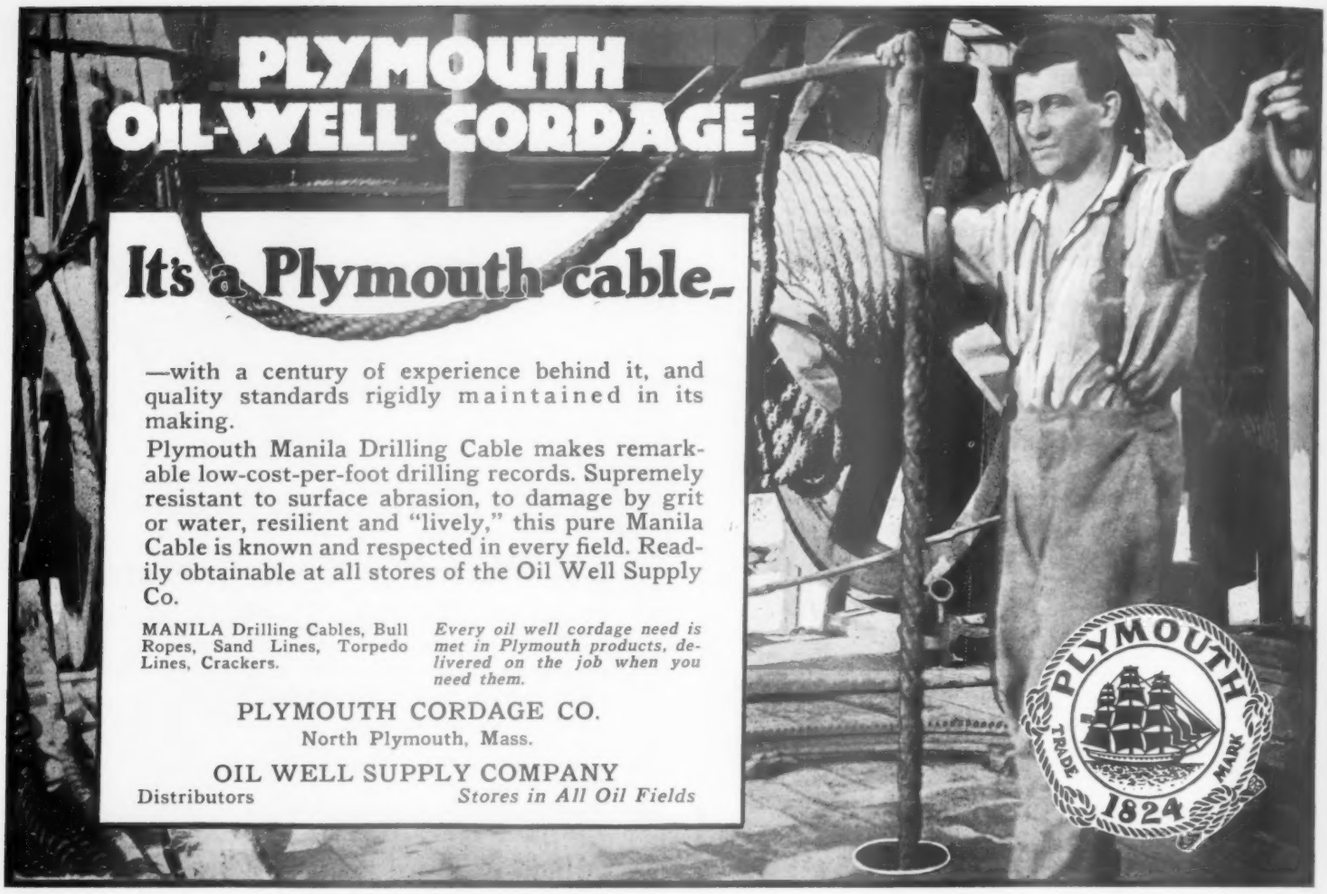
FOR CANADA REFER CANADIAN INGERSOLL-RAND CO., LIMITED
260 ST. JAMES STREET, MONTREAL, QUEBEC

ATLANTA	DENVER	PHILADELPHIA
BIRMINGHAM	DULUTH	PITTSBURGH
BOSTON	EL PASO	POTTSVILLE
BUFFALO	HOUGHTON	SAN FRANCISCO
BUTTE	JOPLIN	SALT LAKE CITY
CHICAGO	KNOXVILLE	SCRANTON
CLEVELAND	LOS ANGELES	SEATTLE
DALLAS	NEW YORK	ST. LOUIS
DETROIT	NEW ORLEANS	WASHINGTON

Ingersoll-Rand

High-Pressure Portable Compressor

PLYMOUTH OIL-WELL CORDAGE



It's a Plymouth cable—

—with a century of experience behind it, and quality standards rigidly maintained in its making.

Plymouth Manila Drilling Cable makes remarkable low-cost-per-foot drilling records. Supremely resistant to surface abrasion, to damage by grit or water, resilient and "lively," this pure Manila Cable is known and respected in every field. Readily obtainable at all stores of the Oil Well Supply Co.

MANILA Drilling Cables, Bull Ropes, Sand Lines, Torpedo Lines, Crackers.

Every oil well cordage need is met in Plymouth products, delivered on the job when you need them.

PLYMOUTH CORDAGE CO.
North Plymouth, Mass.

OIL WELL SUPPLY COMPANY
Distributors *Stores in All Oil Fields*

PLYMOUTH TRADE MARK 1824

Hard? Tough? Brittle?

Yes! Yes! No!

You can't afford to take chances with drill rods. Neither can we. That's why, as an added measure of protection for both of us, we consulted an authoritative source of steel information—Carnegie Institute—for assistance in developing the Longyear Steel Formula. Only after a year of exhaustive fatigue and tensile tests by the Institute's metallurgical engineers was the proper carbon content and annealing temperature determined.

The resulting specifications have produced a special cold drawn seamless tubing of the proper degree of hardness and toughness—WITHOUT BRITTLENESS—that can be depended upon to give the long service to which you are entitled.

This same thoroughness applies in the selection of steel for blank bits, core shells and lifters, double tube core barrels, and other diamond drill supplies manufactured in the Longyear shop.

Our branch warehouse at Ponca City, Oklahoma, is at your service. Catalog may be obtained by writing to—

E. J. Longyear Company
Minneapolis, Minnesota, U.S.A.

FORD
Tribloc Chain Hoists

Safeguard Profits This Way

Get equipment that the inexperienced workman can effectively operate and the cost of load lifting quickly drops. Triblocs are easy to operate, simply constructed, sturdy and with strength to survive the gruelling tests to which chain hoists are sometimes subjected.

Send for Catalog 7-B.

FORD CHAIN BLOCK CO.
2nd and Diamond Sts.,
Philadelphia, Pa.

We also manufacture "THE MOTORBLOC"—
an electrically driven chain hoist.

No. 11 Gosnell may precede it into production, as these holes are also nearing completion.

The Associated has several potential producers on the Lloyd lease and, while No. 1 McGonigle in the extreme eastern part of the field is experiencing a little water trouble at 5,312 feet, it is believed that another cement job will remedy this difficulty. It will probably be several weeks before the General Petroleum will be in a position to make another bid for production, as the company had the misfortune to twist off several stands of drill pipe in No. 2 Barnard at 5,644 feet, practically on the eve of its completion. The company stands an excellent chance, however, of recovering the fish lost in this hole, notwithstanding the fact that the crew is working under somewhat of a severe handicap on account of the gas present. The Bolsa Chica Oil Co. began making new hole in No. 1 Hartman a few days ago and the bit is at the present time going ahead at 5,563 feet. It is the intention of the company to carry this well down to around 6,000 feet, from which depth it should be good for at least 2,000 bbls. a day. The Ventura Associated Oil Co. cemented a string of 18-inch in No. 1 Hisey at 681 feet and the hole will be drilled out within the next day or two.

Long Beach

There were a number of recompletions listed in the northwest extension of the Long Beach Field during the past week, but, with one possible exception, most of the wells returned to production were small pumpers. Featherstone & Preston finished deepening their No. 12 Cerritos from the upper to the lower horizon at 4,850 feet and when put on the beam the well started off pumping 118 bbls. daily, the oil testing 22.3 degrees and showing a cut of 1 per cent. George W. Johnson's No. 1 Cerritos was a small pumper in the lower horizon making 98 bbls. of 21.9 gravity oil from 4,823 feet. The Northwest Gasoline Co.'s No. 1 Cerritos, which was returned to production in the upper zone after being cleaned out, was an even smaller well, as it is only pumping 55 bbls. of 21.3 gravity oil daily.

The Julian Petroleum's No. 24 McKinney, recently taken over in the Marine merger, on the other hand, was a fairly satisfactory completion. This well, located in the older section of the field, after being redrilled and deepened to 5,125 feet, was returned to production pumping 392 bbls. of clean 24.4 gravity oil daily. J. E. O'Donnell's No. 36 Cerritos in the northwest extension has just been recompleted after being redrilled and deepened from the upper to the lower horizon and it is pumping 120 bbls. of 21.2 gravity oil daily from 4,845 feet. The Hub Petroleum's No. 4 McMillan was on about a par with this well, as it is doing 118 bbls. of clean 22.9 gravity oil from 4,812 feet.

No. 24 Cerritos of the Henderson Petroleum in the northwest extension was returned to production during the latter part of the week pumping 140 bbls. of 22.9 gravity oil daily after being redrilled and deepened to the lower horizon at 4,799 feet. A. J. Delaney's No. 2 Cerritos was a distinct disappointment when put on a test in the deeper horizon at 4,848 feet, as the output from this depth is cutting about 50 per cent water. It is quite probable that this well will do much better after the water situation has been remedied. Delaney's No. 12 Cerritos offset this unsatisfactory completion as it was returned to production pumping 142 bbls. of fairly clean 22.1 gravity oil daily from 4,760 feet. John Abrams was unsuccessful in securing a natural flow in his No. 1 Cerritos, carried down to the deep sand and finished at 4,812 feet and preparations are being made to put it on a compressor. Walter P. Temple, although he had already listed his No. 5 Cerritos for abandonment as a duster, is resuming work and will add a few hundred feet of hole before calling it quits.

Test Attracts Interest

The Miller & Haley outpost at Twentieth and Magnolia Streets has been the center of interest during the past few weeks due to the fact that some oil colors have been showing up in the sluice box and, while this well may result in the development of another extension, the showings to date hardly warrant this hope. It is quite possible that the oil showing up in the circulating fluid is the result of a fishing job which developed several weeks ago, at which time oil was used to loosen the bit which had become frozen in the hole. The A. T. Jergins Trust has tentatively mapped locations for two new wells on its Municipal lease in the older section of the Long Beach Field and, while the organization is ready to start work immediately, drilling depends upon whether the Long Beach City Council ratifies the proposition submitted for its approval. The lease between the Jergins interests and the city of Long Beach calls for a 40 per cent royalty on all oil and gas produced on municipally owned lands. The Jergins Trust has fulfilled its agreement with respect to the number of wells required under the lease and finds that the property will hold two more wells. These will be drilled immediately if the City Council agrees to reduce the royalty on the two new wells from 40 per cent to 22½ per cent. In view of the fact that smaller production must be anticipated this seems quite equitable and it appears probable that favorable action will be taken upon the recommendation in the near future.

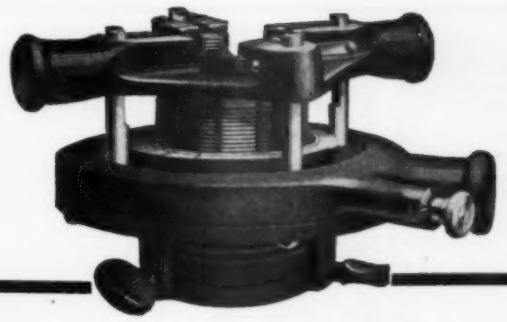
Inglewood

The Standard finished a new producer in the Inglewood Field when No. 71 Pacific was put on a pumping test at 1,965 feet, the hole being finished with an 8⅝-inch oil string. The well is credited with an initial daily production of 104 bbls. of 19.1 gravity oil. A new rig is going up for No. 41 Pacific and drilling will probably get under way within the next 10 days. The company also recompleted No. 24 on Los Angeles Investment Lease No. 1 doing 270 bbls. daily from 2,700 feet.

The Union is working on a very interesting well in the Dominguez Field and it might bear watching within the next 30 days. The hole in question is No. 5 Callender, a former producer which is being deepened and is at the present time down 5,285 feet. The Barnsdall has not yet recovered from mechanical trouble which has been holding up progress in Nos. 13 and 14 on the O'Dea lease at Rosecrans but it is believed that the latter at least will begin making new hole within a short time. The Union is making up tubing to be run in No. 30 Howard Park and this well, together with No. 31, should be given a production test within the next two weeks.

The Chanslor-Canfield Midway Oil Co., as a result of its consistent development work in the Torrance Field, has finished another successful producer on the Del Amo property. The well in question is No. 60, listed a few days ago as a 128-bbl. pumper from 3,630 feet, the hole being finished with an 8¼-inch oil string. Rotary equipment is being rigged up in three other wells on this lease, at least two of which should be spudded in some time during the next 10 days. The Standard's No. 19 South Whittier Community, a new well in the Santa Fe Springs Field, was given a preliminary production test during the early part of the current week but it failed to come up to expectations due to the fact that a satisfactory water shutoff had not been effected. The initial pumping showed 50 bbls. of oil and 200 bbls. of water and, since it was quite apparent that a water shutoff had not been secured, the well was immediately recemented. The General Petroleum had a little better luck with No. 22 Santa Fe, as this well is pumping 162 bbls. of 28.9 gravity oil from 3,810 feet, the hole being finished with a 6½-inch oil string carrying 298 feet of 100-mesh screen. The Associated, after redrilling and cleaning out No. 1 Jordan to bottom, put it on a compressor with the result that the well's production has been increased from 75 bbls. to 145 bbls. daily.

There was no change in the amount of



GENUINE "TOLEDO" TOOLS— YOU CAN'T EQUAL THEM FOR SERVICE

Year in and year out you will find that "TOLEDO" tools will thread the pipe easier, smoother, and more satisfactorily than any other pipe tools.

For twenty-five years genuine trade-marked "TOLEDOS" have been specified by experienced operators, who know the difference between genuine "TOLEDOS" and ordinary pipe threaders.

If you, too, would enjoy this satisfactory service, specify a genuine "TOLEDO" trade-marked pipe threader the next time.

"TOLEDO" TRADE-MARK

—The Sign of Satisfaction. Insist on it when buying.

THE TOLEDO PIPE THREADING MACHINE CO. TOLEDO, OHIO

In laying deLavaud Centrifugal pipe, the plain end slides forward, riding on the tapered shoulder inside the bell until it automatically centers itself.

Makers of deLavaud Centrifugal Cast Iron Pipe

deLavaud Centrifugal pipe is self-centering—easy to lay

THIS pipe is equipped with bell and plain end joint similar to the type used by the Metropolitan Water Board of London, England. Once in place and caulked in the usual manner, these joints show unusual resistance to blowing out and are most flexible.

Write for literature covering the specifications and use of deLavaud Centrifugal Cast Iron Pipe

United States Cast Iron Pipe and Foundry Company

SALES OFFICES

Philadelphia, Chicago, Birmingham, Buffalo, Cleveland, New York, San Francisco, Pittsburgh, Dallas, Kansas City, Minneapolis

General Offices: Burlington, New Jersey

OTHER "PENBERTHY" PRODUCTS
Ejectors
Cellar Drainers
Oil Gages
Water Gages
Oil Cups
Grease Cups, Etc.

PENBERTHY PRODUCTS

Special High Pressure Automatic Injector

Write For Catalog

Owing to the increasing demand in the oil fields for injectors to operate on higher pressures, this high pressure injector is recommended where boilers are operated at pressures to 200 pounds.

PENBERTHY INJECTOR COMPANY
Established 1886
Canadian Plant: WINDSOR, ONT., CAN.
1260 Holden Ave., DETROIT, MICH.

use "Gimco X"

a hard-finish high-temperature CEMENT

made especially for use over

Gimco Flexfelt Gimco Insulating Block
Gimco Insulating Brick
or any
Heat Insulation on Stills, Boilers, Ovens, Tanks, Pipes, Furnaces, etc.

Manufactured by

General Insulating and Manufacturing Company
Alexandria, Ind.
"HOME OF ROCK WOOL"

development work done in the Seal Beach Field during the past week, although of course all of the four wells drilling in that area made footage during the period in question. Drilling in this district is approaching the point where something definite should be determined with respect to the trend and extent of the structure in this area and developments during the next few weeks should throw some light on the fields potentiality. The water string should be landed in two of the Marland's three drillers, No. 3 Bixby and No. 1 Selover, some time during the next week and, since the company's No. 4 Bixby is already down 3,208 feet, it, too, should be cemented within a short time. The Standard's No. 2 San Gabriel is rotating ahead at the present time in a hard sand at 3,780 feet and it is quite likely that this well will also be cased off within the next two weeks. A rig is standing for No. 3 San Gabriel and, although rotary equipment has not yet been installed, it is believed that all preliminary work will be accomplished shortly.

To Test New Lease

The Associated has not lost any time in starting development work on the recently acquired Bryant lease in this field and, although this property was only tied up about a month ago, the first well is already under way, having been spudded in yesterday afternoon. The Pan American has a location staked for No. 1 Collins in the Alamitos Heights section in the western part of the field and, while material is not yet on ground, it is understood that work may get under way within the next few weeks. The question of whether or not oil derricks are to be permitted to continue their encroachment into choice residential sections of Long Beach will be placed before the electorate of the city for final and lasting decision if the efforts of civic bodies prevail. Members of the Naples Improvement Association have taken the initiative in the movement for a special election at which to determine the future of Long Beach so far as oil production is concerned. A majority of the residents of the Naples section, a residential district on Alamitos Bay, are said to be opposed to any developments of that territory for oil and petitions are to be circulated at once in an effort to bring the question to a final settlement. It was reported today that improvement associations in other districts, such as Alamitos Heights and Belmont Heights, adjacent to the Seal Beach Field, will follow suit. The Los Cerritos extension of Signal Hill where more than 250 derricks have been erected, and where the most beautiful and exclusive residential section of Long Beach was ruined, is being pointed to by Naples residents as a horrible example of what may happen in Naples and other residiential sections. Field reports from the various oil offices in the Los Cerritos extension show that so far as prolonged oil production or even ordinarily good production is concerned, the field has kicked out, leaving a few wells producing on the pump, a mere handful producing by natural flow and a vast array of blackened derricks, now idle as monuments to mark the spot where once people of wealth had their homes. The Naples improvement organization plans to send a large delegation before the City Council tomorrow to demand that the city fathers uphold the ruling of the City Planning Commission which banned oil derricks in the Naples section. As a result of this agitation the Pan American has held up its test in Alamitos Heights and the company is still undecided whether to go ahead or pull out.

Montebello

The Standard is apparently pretty well sold on the possibility of securing commercial production along the west edge of the Montebello Field, as the company has just spudded in its second well in this area, No. 1 Whitehead Community, which at the present time is standing cemented at 534 feet. This well is still further out than No. 1 Benedictine, which at 3,603 feet, looks very promising. The Standard has one other driller in this field, No. 4 Howard & Smith, down 3,600 feet, and No. 61-A Baldwin, a replacement for No. 61, abandoned at 3,395 feet because of mechanical trouble. The McGinley Oil Co. and the St. Helens Petroleum should both finish another well or two in this field within the next three weeks, as each is running two strings of tools. The Superior put a cement plug in No. 1 Masser at 3,563 feet and a pumping test is being made at the present time.

The Union has just spudded in No. 12 Yorba Linda Group in the Richfield district and, since locations have been flagged for Nos. 13 and 15, the company apparently contemplates additional work. A rig is also going up for No. 7 Morse and when this well is spudded in the company will be running something like seven strings of tools, the last spud being No. 7 Thompson & Goodwin, now down 1,210 feet. The Union is drilling four wells on the Stearns lease at Fullerton, two of which should come into production some time within the next few weeks. The Shell should also list two new wells for completion in the Fullerton Field in the near future as Nos. 11 and 13 on the Orange property are looking exceptionally promising. No. 5 Pico should follow these two wells into production a short time later. The General Petroleum will probably not be in a position to make a big for production in the Fullerton Field for another several weeks but No. 1-A Thompson in the Richfield district is being prepared for a test scheduled to be made within the next week or ten days.

Midway-Sunset

The Western American Petroleum Co., recently incorporated, has taken over the holdings of the Vivian B Oil Co. in the northwest quarter of Section 35-32-22, in the Hovey Hills section of the Midway-Sunset area, together with the Northern Oil Co.'s property at Maricopa in Section 1-11-24. The Western American acquired 64 acres, 16 shallow wells producing about 500 bbls. a day from around the 1,500-foot level. It is the intention of the company to initiate a progressive drilling campaign which it is expected will increase the daily output to around 1,000 bbls. The California Petroleum finished a new well in the Midway-Sunset area, Section 34-32-24, but this new producer, No. 7, was only good for 170 bbls. on the beam from 3,566 feet. The Standard picked up the brown shale in No. 3 Rass out in the Maricopa Flats at 4,906 feet and it is believed that it will be good for somewhere around 200 bbls. a day when given a test. The Union's No. 1 Houchin, also in this area, is experiencing some water trouble, but the series of tests now being made should remedy this difficulty. No. 2 Boss of the same company is going along cautiously in the brown shale at 5,230 feet.

Southern California Wildcats

The outstanding wildcat in southern California at the present time is the Associated's No. 1 Cypress west of the Inglewood Field, which has been carried down to 4,040 feet with an 11-inch water string landed at 3,798 feet. The cement has just been drilled out and the well bailed down to around the 1,500-foot level. It is believed that a satisfactory water shutoff has been effected and, although the bailings did not show any oil, this does not lessen the possibility of the company opening up a new field at this point. Officials of the company are rather reticent in releasing any information other than to state that this wildcat looks interesting. If the Mining Bureau passes on the water shutoff drilling will be resumed tomorrow and something definite should be known of the well's potentiality within the next few days.

The Southern California Drilling Co. spudded in No. 1 Matteson in the El Segundo quadrangle a few days ago and it is quite possible that a string of 16-inch will be landed before the close of the week. The company has 320 acres under lease in this area and the well now being drilled is about a mile north of the town of El Segundo and about a similar distance removed from the Rider Syndicate's test which is down 2,300 feet. The Pan American's No. 1 Pacific Southwest, drilled in this vicinity

a little over a year ago, encountered a few feet of oil sand around the 3,600-foot level but it was not commercially productive. For this reason the tests of the Rider Syndicate and the Southern California Drilling Co. should prove interesting to watch during the course of the next 30 to 60 days.

The Julian Petroleum is making fairly rapid footage in its No. 1 Mosier, a wildcat west of the northern part of the Rosecrans Field and, although spud was only made two weeks ago, the hole is already down 2,680 feet. The Petroleum Securities ran into a little fishing job in No. 1 DeBaker, its Bandini wildcat, and as a result progress is being held up pending the recovery of a bit lost at 1,265 feet. The Dominguez Extension Oil Co. is rotating ahead in a hard sand in its test located midway between the Dominguez and Rosecrans Fields but due to the fact that the well is only down 1,300 feet, it will be some time yet before anything can be expected. Neither the Standard's No. 1 University at 4,235 feet nor No. 1 Sesnon of the Petroleum Securities at 4,320 feet has so far found anything more favorable than a few minor gas showings and as a result these two tests, located in the San Fernando Valley, are taking on a rather doubtful aspect.

A check of wildcatting in southern California at the present time revealed several holes which will probably be listed for abandonment in the near future unless they show a very decided improvement within the next few hundred feet. Included among these prospective dusters are the Marine's No. 1 Strong at Bellflower, which is still devoid of any favorable showings at 5,220 feet, and the Union's No. 1 Howland at El Segundo. The latter is held up with a fishing job which developed at 5,326 feet, and this may possibly be the beginning of the end. The Smith Petroleum's No. 1 Johnson at Hawthorne has also entered the doubtful stage as the formation at 4,860 feet is still a hard gray sand. The Union's No. 1 Saugus in the Newhall-Saugus area is not yet out of the running at 4,370 feet, but it is no secret that the company would welcome a little encouragement.

The Milham Exploration Co. has been held up for several weeks as a result of a fishing job in its No. 2 Playa del Rey and, unless a speedy recovery is effected, this wildcat may be abandoned at its present depth, 6,100 feet. The Van Nuys Community Oil Co. did not make any additional footage during the past week, but has spent this time in cleaning out the hole in order that the well may be carried to a successful conclusion.

Northern California Wildcats

The Federal Exploration Co.'s No. 1 Kinsella near Picley in Tulare County, a few miles north of the Kern County line, has attracted considerable attention during the past few weeks and on the showings of this wildcat it is reported that the Associated, Marland, California Petroleum, Wilshire, Julian Petroleum, Milham Exploration and General Petroleum have acquired protective holdings either in fee or under lease. The Standard of course is protected to a certain extent through the fee holdings acquired in the Pacific Oil merger, but is reported to be dickering for additional acreage. The Federal's wildcat, which is in Section 15-32-24, is still logging gas showings at 3,400 feet and officials of the company are so optimistic over the outlook that they have acquired several hundred additional acres. It must be remembered, of course, that while the outlook is quite encouraging the well is by no means assured of commercial production, as the well log only shows around 5 feet of oil sand which was passed up without a test. This test will nevertheless bear watching during the next few hundred feet of hole.

The Shell found a small showing in No. 1 Berlywood at Moorpark in Ventura County at 6,590 feet but it was not of sufficient thickness or saturation to warrant a test and as a result drilling has been resumed. The Associated is constructing a rig for a second test near Kerman in Fresno County and it is believed that drilling will get under way within the next 30 days. The Bolsa Chica is making preparations at Kettleman Hills to run in a string of 10-inch and cement somewhere around 2,250 feet in an effort to overcome the water trouble which is holding up this promising looking wildcat. Considerable surveying and geological work has been done in this vicinity during the past few weeks and it is reported that someone is contemplating a test north of the Bolsa Chica's wildcat but nothing definite has been determined along this line. The Standard has tentatively located a wildcat in Section 31, the section south of that on which the Bolsa Chica is working, but no steps have yet been taken toward starting work. The Marland it is believed has found the top of the Vaqueros at 5,650 feet in No. 1 Elliott, about 5 mlies away from the Bolsa Chica on a separate structure.

Trouble Delays Tests

Several wildcats in the northern part of the state ran into mechanical trouble during the past week and as a result a good many tests are being held up. The Chanslor-Canfield Midway Oil Co. has not yet recovered from the mechanical trouble which developed in No. 1 Hobson in Ventura County some time ago and the outlook is not any too promising. The Milham Exploration Co.'s No. 1 Sexton in Ventura County is also being delayed because of a fishing job. No. 1 White of the Pan American, a wildcat in Monterey County, is held up with a fishing job at 2,638 feet, while the crew on the Pyramid's No. 1 Trescony in Monterey County is spending their time in a similar manner. Both these jobs developed during the past week. The Henderson Petroleum suffered a twistoff early in the week while its No. 2 Piru in Ventura County was rotating ahead at 1,162 feet and consequently no footage will be made until the fish has been recovered.

The Miley Exploration Co. spudded in its No. 1 Goleta in Santa Barbara County a few days ago on a lease aggregating approximately 2,250 acres. The company's geological department is of the opinion that the well defined structure at that point presents unusual possibilities and because of its importance the well will be watched with unusual interest. R. M. Ashby and Lee M. Gregory of Bakersfield were winners in a Government land lottery held in the United States Land Office at Visalia a few days ago. Gregory's permit covered 640 acres in Section 9-25-20 in the southern extension of Kettleman Hills several miles south of the Bolsa Chica's well, while Ashby's drilling permit was on 440 acres in the Buttonwillow area about 5 miles removed from the Milham Exploration Co.'s wildcat in that vicinity.

MEXICAN FIELDS

(Continued from Page 53)

producer now of 500 bbls., by heads. Juxtaposed to it were the offsets Nos. 2 and 6, both of which are dry San Felipe holes at 2,350 and 2,300 feet, respectively. Thus far there have been five dry holes drilled in the vicinity of the north bank of the Tamesi River in Altamira—only recent operations considered. The operations of the Gulf company in Los Esteros, while in the Canton of Altamira, are some kilometers north of operations extant near the north bank of the Tamesi River, and might reasonably be considered rather apart from the operations in the immediate vicinity of the river's edge. The Gulf's first producer, it will be recalled, was its sixteenth finished hole. Wherefore, while southern Tamaulipas is now on its way and has earned its place on the production map, Lady Luck is apparently going to be quick fickle in the distribution of production plums.

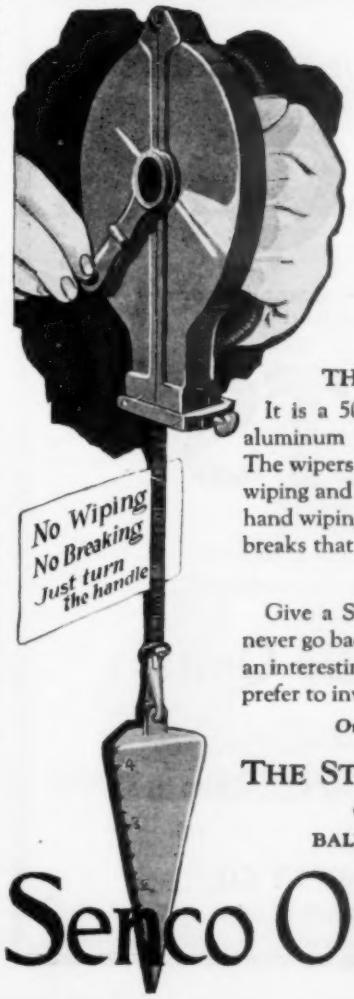
Field Operations

If operators are indulging in any prayers in Mexico at this time, it is for surcease from the rains which have been of long duration this summer and early fall. With October it was hoped they would stop, but this far it has been a question

PATRICK CARBON
for Diamond Core Drilling

True economy in drilling is only achieved when you are sure of the reliability of your carbon source. That is why Patrick is known as carbon headquarters.

R. S. PATRICK
Duluth, Minnesota, U.S.A.
Cable Address, "Exploring" Duluth



OFFER to return money means only more orders!

WE TELL EVERYBODY.

You can order one of the SENCO OIL GAUGERS just like hundreds of others and if you are not entirely satisfied we will refund your money. Everybody that orders is satisfied because we only get repeat orders.

THE SENCO OIL GAUGER

It is a 50′ steel tape enclosed in water proof aluminum housing, with babbitt metal wipers. The wipers are the real trick. They save hand wiping and you know right off what a dirty job hand wiping is to say nothing of the twists and breaks that result.

TRY ONE—$18.75

Give a SENCO OIL GAUGER a trial and you'll never go back to the old-fashioned reel. We have an interesting little descriptive booklet if you would prefer to investigate it further before a trial order.

Order from your dealer or direct.

THE STATES ENGINEERING CO.
600 E. LOMBARD STREET
BALTIMORE · MARYLAND

Senco Oil Gauger

Heavy Duty Jack

Balanced—for Deeper Pumping

For deeper pumping. Where, of necessity, light load on pull rods is needed. Long stroke. Polish rod moves in perfectly straight up and down movement. Fulcrum point not over 12 in. above floor—will not get out of line like those highly elevated. Only light concrete foundation required—lowest cost to install. Weight 1250 lbs.

Stocks for delivery at these points:
Wichita Falls, Texas
Grover C. Johnson.
Tulsa, Okla.,
B. V. Emery & Co.
Casper, Wyo.,
General Engineering Company
Bradford, Pa.,
Combination Eng. & Com. Co.
All Republic Supply Stores.
Houston, Texas,
Harry B. Shine.
Putnam, Texas,
Putnam Supply Co.
All International Supply Co. Stores

Write for showing of full line.

Kansas City Hay Press Co.
Oil Field Supplies **Kansas City, Mo.**

"A REAL OIL COUNTRY BELT"

O AND G

OIL GAS

Pumping—Drilling — Compressor
Double-Stitched

BELTS

"All the world loves a fighter,
All the world hates a quitter"

O & G *Never* Quits

Manufactured by

IMPERIAL BELTING CO., Chicago

Sold by

OIL WELL SUPPLY CO.

In All Fields

of hope delayed. High rivers, which mean swift currents and slow and expensive river transport; and the attendant bad roads and trails, have done much to either slow down operations or delay their commencement until a drier time.

In the Panuco-Cacalilao sectors of the northern fields, drilling operations are best epitomized as follows: La Corona Petroleum Co.'s No. 184, Lot 4 Cacalilao, is in gray and brown lime at 1,730 feet; and in Lot 1 two locations are rigging. In the Panuco, La Corona's No. 127 Piedras is in gray lime at 1,320 feet; No. 128 Salvasuchi is in the same at 1,665 feet; No. 129 Ojital is in gray shale at 830 feet; No. 130 La Polla is fishing a bailer at 1,175 feet; No. 131 Piedras cemented 10-inch in gray lime at 1,225 feet; No. 132 Ojital is in sand at 120 feet, and No. 8 Chijol is in gray lime at 2,186 feet. International Petroleum Co.'s No. 265, Lot 5 Cacalilao, cemented 8-inch in gray lime at 1,148 feet; No. 280, same, is ready to spud, and it is rigging for No. 29 Tanchicuin in the Panuco sector. Cia. Pet. Chileno Mexicano's No. 32, Lot 3 Buena Vista, is in sale at 600 feet. Mexican Sinclair Petroleum Corp.'s No. 33 Tananturo is in shale at 156 feet; No. 14, Lot 1 Camolote, is in gray lime at 1,330 feet. In the Cacalilao, Sinclair's No. 135, Lot 3 Cacalilao, is in shale and shells at 1,089 feet. Mexican Gulf Co.'s No. 28 Lopez is in gray lime at 1,728 feet; No. 23 Flores is in the same formation at 1,470 feet, and No. 24 Flores cemented 8-inch in gray lime at 1,190 feet. National Oil Co.'s No. 22 Chijoles has shut down at 2,420 feet, brown lime, with 1,500 feet of oil in the hole. High water caused the suspension this time. Transcontinental Petroleum Co.'s No. 217, Lot 4 Cacalilao, is in shale at 280 feet; its No. 274, Lot 4, has cemented 8-inch in gray lime at 1,200 feet. In the Panuco sector, Transcontinental has three locations rigged, waiting for permits. National Lines' federal zone rigs in the Panuco follow: No. 57 Estero Grande has shut down account high water at 1,395 feet in hard gray lime; No. 93 Halcon is in white lime at 1,100 feet, and No. 37 Tanchicuin has also had to suspend account high water at 1,200 feet, gray lime. Vera Cruz Mexican Oil Co.'s No. 10 Buena Vista is rigging. Territorial Oil Co.'s No. 10 Buena Vista is rigging. Territorial Oil Co.'s federal zone test in the Ojital, Panuco, No. 17 is in gray lime around 1,400 feet, and No. 20 has cemented 8-inch at 1,275 feet in gray lime.

Ebano

At Ebano, Mexican Petroleum Co.'s operations follow: No. 48 Chijol is in white lime at 2,100 feet; Nos. 10 and 12 Ebano is in gray lime at 1,690 and 1,283 feet, respectively; in La Dicha: No. 107 is in white lime at 2,515 feet; No. 110 is in gray shale at 310 feet; No. 114 is in yellow clay at 45 feet; Nos. 117 and 118 is in gray lime at 2,250 and 1,885 feet; in the Conteca: No. 117 is in blue shale at 620 feet; No. 118 is in gray lime at 1,215 feet; No. 119 is in white lime at 2,124 feet; No. 120 is spudding, and No. 124 is a derrick. In the La Pez, Mexican Petroleum's No. 18 is in gray shale at 1,130 feet. National Lines' operations in its right of way through the Conteca follows: No. 108 cemented 8-inch in gray lime at 1,290 feet; No. 110 is in the Tamasopa at 2,125 feet; No. 112 is in gray shale with lime streaks at 1,165 feet.

South Fields

In the south fields, operations follow: Huasteca Petroleum Co.'s No. 74 Tierra Blanca is in gray lime at 2,060 feet; No. 76 is in gray lime at 1,952 feet; No. 16 Chapopote Nunez is in gray lime with pyrites of iron at 2,882 feet. Mexican Eagle Oil Co.'s No. 11 San Diego cemented 4¾-inch in shale and gumbo at 1,700 feet; No. 2 Poza Rica has shut down in hard sandy rock at 2,590 feet. Cortez Oil Corp.'s No. 13, Lot 357 Aguada, cemented 11-inch in gray shale at 2,198 feet.

Penn Mex Fuel Co.'s No. 3 La Pita, the most westerly test drilling in the south fields at this time (south of the Tuxpam River), has the academic distinction of being the deepest test yet drilled for oil in Mexico. The test is in gray and brown shale at 5,977 feet at the last report.

Northern Fields Miscellany

In southern Tamaulipas, drilling operations at this time follow: At Los Esteros, American International Fuel Co.'s No. 33 is in hard gray lime at 2,146 feet; No. 34 is in gray and brown lime at 2,102 feet; No. 40 is in gray and brown lime at 1,555 feet. National Lines' No. 55 Altamira is in gray lime at 1,220 feet; No. 94 is in gray lime at 1,055 feet, and No. 71 Chapacao (south bank of the Tamesi River) is in gray shale with lime streaks at 980 feet.

In Corcovado, La Corona Petroleum same, cemented 6-inch in shells at 1,150 Co.'s No. 27, Lot 6, is rigging; No. 28, feet.

In the Marland Field, Cia. Pet. Franco Espanola's No. 66 Limon is in blue shale at 1,215 feet; No. 67 cemented 8-inch in gray lime at 1,500 feet; Nos. 69, 69, 70 are each in gray lime at 2,125, 2,300 and 2,250 feet respectively. Two locations have derricks over them.

In the Quebrache, Globe Petroleum Co.'s No. 1, Lot 80, cemented 8-inch in lime shells at 2,787 feet; No. 9, same, is in gray lime and shale at 2,860 feet.

In the Caracol, Mexican Petroleum Co.'s No. H-8 is in gray lime at 1,817 feet. Venable and others' No. 53, same, cemented 8-inch in gray lime at 1,782 feet.

In Topila, Cia. Pet. Financiera's No. 4, Lot 14 Paciencia de Aguacate, has shut down for orders at 2,360 feet in gray lime and black chert, showing 1,000,000 feet of gas.

LA.-ARK. WILDCATS

(Continued from Page 57)

Section 35-13-5, is shut down at 2,650 feet.

Lafayette County

Arkansas Fuel Oil Co.'s No. 5 Allen, Section 18-19-24, is waiting for a standard rig at 2,788 feet. Kensaw Petroleum Co.'s No. 3, Section 3-20-24, is shut down for orders at 2,840 feet, after testing salt water.

Little River County

Arrangements are being made to recement 5⅜-inch casing at 2,941 feet at Grote and associates' No. 1 Allen, Section 2-13-31. Mellick Oil Co.'s No. 1 Hawkins, Section 10-11-31, is drilling at 1,927 feet.

Miller County

Lenze and associates' No. 2 Dale, Section 28-15-26, is drilling at 750 feet.

LOUISIANA WILDCATS
Bienville Parish

Kimbrough and associates' No. 1 Cargle, Section 27-15-8, is a derrick. Woodley & Collins' No. 1 Thomas, Section 23-16-10, is waiting for 6-inch to set at 2,546 feet.

Bossier Parish

Doern and associates set 4½-inch casing with a packer at 2,673 feet to cut off salt water. The 6-inch casing seat leaked and the 4½-inch was pulled and the hole plugged back to 2,673 feet. The test is shut down waiting for cement to set. Total depth 2,684 feet. Twelve and one-half inch casing was set at 309 feet and Woodley & Collins' No. 1 Roberson, Section 22-23-22, is drilling at 318 feet.

Caldwell Parish

Roxana Petroleum Corp.'s No. 1 Louisiana Central, Section 22-12-3e, was dry and abandoned in gray sandy shale at 1,765 feet. Southern Crude Oil Purchasing Co.'s No. 1 Caldwell Lumber Co., Section 23-13-5e, is drilling at 50 feet. Victor Wenzell's No. 1 Caldwell Lumber Co., Section 22-14-4e, is a rig.

Catahoula Parish

S. D. Hunter's No. 1 Tensas Delta, Section 36-10-7e, is drilling rock at 172 feet.

Claiborne Parish

Gilliland Oil Co. and Ramsey's No. 1-D Taylor, Section 14-23-8, is shut down in sandy lime at 4,807 feet waiting for orders. Ohio Oil Co.'s No. 9 Milner, Section 22-23-8, is driling at 1,700 feet. Triangle Drilling Co.'s No. 1 Keen, Sec-

tion 7-19-5, is drilling broken lime at 4,605 feet. E. A. Underwood and associates' No. 1 Bulloc, 400 feet south and 140 feet west NE cor. NE SE, Section 2-20-7, is a rig.

DeSoto Parish

Clark & Melat and associates' No. 1 Billingsley, Section 12-11-16, is a rig. Dixie Oil Co.'s No. 1 Jenkins, Section 9-12-11, is shut down at 4,863 feet waiting on 4½-inch casing. Helm & Jarman's No. 1 Joyner, Section 28-11-12, is shut down at 250 feet waiting for 10-inch casing. Snapp and associates' No. 1 Flores, Section 27-11-11, is drilling at 2,860 feet. The Texas Company's No. 11-A Wemple, Section 2-12-12, is drilling shale at 1,918 feet.

East Carroll Parish

T. A. Snell's No. 1 Garden Homes Co., Section 34-20-12e, is drilling at 900 feet.

Franklin Parish

Arkansas Fuel Oil Co.'s No. 1 Blue, 1,020 feet north and 300 feet west SE cor. NE, Section 9-12-6e, is a derrick. R. W. Williams and associates' No. 1 Lemon, Section 17-14-8e, is drilling at 350 feet.

Grant Parish

Gulf Refining Co.'s No. 2 Swope, Section 17-9-1e, has a hole full of fluid from sand at 1,607-10 feet and is waiting for a standard rig. H. L. Hunt's No. 1 Matthews, Section 15-9-1e, tested salt water at 1,678 feet and is shut down for orders. Keen & Woolf Oil Co.'s No. 1 Rider, Section 16-9-1e, is drilling at 1,701 feet.

Jackson Parish

El Dorado Chief Oil Co.'s No. 1 Jones, Section 3-14-4w, is shut down at 2,610 feet. Charles A. Ferguson's No. 1 Martin, Section 5-15-1e, is drilling chalk rock at 2,924 feet. Grigsby & Co.'s No. 1 Adams, Section 23-17-4w, is shut down at 2,400 feet. Louisiana Petroleum Co.'s No. 1 Davis Theus, Section 12-16-3w, is drilling at 625 feet.

Lincoln Parish

Arkansas Fuel Oil Co.'s No. 1 Nobles, Section 18-19-3w, is a rig. Buckley & Palmer's No. 1 Davis, Section 12-20-3w, is drilling sandy lime at 2,674 feet.

Natchitoches Parish

Brothers and associates' No. 1 Cockfield, Section 78-7-5w, is being reamed to the bottom at 1,865 feet. R. E. Davison and associates' No. 1 L. L. L. L. Co., Section 21-7-9, was abandoned at 2,031 feet. Edwin J. Forrest's No. 2 Ayers, Section 3-13-7, is shut down at 1,900 feet. Gulf Refining Co.'s No. 1 L. L. L. L. Co., Section 39-7-7, is drilling dark gray sand at 1,538 feet. Hanby and associates' No. 1 Long, Section 34-10-8, is a derrick. Humble Oil & Refining Co.'s No. 1 Person, 1,850 feet east and 2,800 feet south NW cor. Section 46-8-6, is a rig. Keator and associates' No. 1 Pearson, 1,850 feet east and 2,800 feet south NW cor. Section 48-8-6w, is a rig. Lawson & Pharris' No. 1 Clark & Morse, 600 feet north and east C Section 23-5-6w, is a location. McCormick and associates' No. 1 Russell, Section 41-10-7, is being reamed to the bottom. Ohio Oil Co.'s No. 2 L. L. L. L. Co., Section 20-8-8w, is drilling at 125 feet. Oil Operators Trust's No. 1 Clark, Section 9-10-8, is drilling at 1,900 feet. Eddie Self's No. 1 Fisher, Section 18-8-9w, is drilling hard shale at 2,100 feet. The Texas Company's No. 1 Moss, Section 31-7-8, is rigged and waiting for fuel.

Rapides Parish

Hincey & Macke's No. 1 Barrows, Section 29-5-2w, is shut down at 2,785 feet. Love and associates' No. 1 Voda, Section 12-4-1e, had a small show of gas and gray sand at 1,830 feet and is being cored. Seip and associates' No. 1 Ball, Section 41-4n-2w, resumed drilling and is boring through hard lime at 2,135 feet.

Richland Parish

A derrick pattern is on location for Aarnes and associates' No. 1 Hawley, SW cor. NW NE, Section 3-18-9e. Gulf Refining Co.'s No. 1 England, Section 32-17-6e, is drilling gray sand at 1,580 feet. Gulf company's No. 1 Ches-Wyman, Section 23-18-8e, is drilling hard blue shale at 2,744 feet. A derrick pattern is on location for Oliver and associates' No. 1 Hatch, C SW, Section 2-15-5e. Roxana Petroleum Corp.'s No. 1 Humble Brothers, Section 10-14-6, is spudding.

Sabine Parish

Godchaux and associates' No. 1 Nona Mills, Section 12-4-13, started up but is shut down at 920 feet. Lewis-Clark Petroleum Co.'s No. 1 Wyatt Lumber Co., Section 23-5-12, formerly Reliance Drilling Co.'s No. 1, is going ahead after setting 10-inch at 169 feet. Magnolia Petroleum Co.'s No. 1 L. L. L. L. Co., Section 11-6-11, is being reamed to the bottom at 1,750 feet.

Winn Parish

Allen Drilling Co.'s No. 1 Sanders, Section 21-13-2w, is drilling rock at 1,770 feet. Dodge & Cordell's No. 1 Tremont, Section 35-13-2w, is being rigged. Humble Oil & Refining Co.'s No. 1 Grant, Section 28-9-3w, formerly No. 15-A L. & A., was abandoned at 1,633 feet. Humble company's No. 15-A L. & A., 1,520 feet south and 660 feet west center Section 26-10-2w, is a rig. Hyde & Nelson's No. 1 Louisiana Central, Section 16-13-1w, is being rigged. J. C. Long's No. 1 Milam, Section 28-13-3w, is shut down at 704 feet for 8-inch casing. A show of oil was claimed to have been encountered at that depth. Ohio Oil Co.'s No. 2 Edenborn, Section 4-12-1w, is being reamed to the bottom at 2,568 feet.

LaSalle Parish

Tunica Petroleum Co.'s No. 12-A L. & A., Section 17-7-3e, was dry and abandoned at 2,617 feet; No. 13-A L. & A., Section 25-8-1e, is drilling at 1,716 feet. Tunica company's No. 14-A L. & A., 300 feet north and east center Section 29-7-3e, is a rig.

SOUTHWEST TEXAS

(Continued from Page 62)

feet from southeast line, has spudded in No. 1 J. Benavides. Buffman and others are drilling at 1,600 feet in No. 1 Benavides in Block 38, Subdivision 1, Mesquite ranch, 150 feet from east line and 660 feet from west line. O'Hern & Seacord in No. 2 Benavides are coring at 1,840 feet. This well is in Survey 174, Block 12, 6 miles south of Cin-Tex Field and in the same block as the discovery well of O'Hern & Seacord, which came in a gasser and was shut down to prevent running wild. They have made a location in same block 350 feet from southwest and southeast lines for No. 3 Benavides and are drilling at 300 feet. Humble Oil & Refining Co., in the northern end of Survey 4, in No. 10 Singer, is drilling in rock at 869 feet. Location is 1,500 feet from north line and 300 feet from east line. Its No. 5 Schallert, Survey 255, north central part, is drilling in rock at 3,288 feet. Humble-Reiter-Foster in Survey 406 in No. 1 Kohler, 660 feet to south and east lines, is drilling in lime and shale at 1,638 feet; No. 2 Kohler, Survey 168, 1,320 feet from south and east lines, is drilling in sticky shale at 1,400 feet. George M. Ball, Survey 463, in No. 1 Roach, in center of survey, is drilling at 3,375 feet. National Refining-Lewis Oil-The Texas Company in No. 1 Dinn, Survey 668, is in sand showing oil at 2,516-20 feet. Location is 200 feet from east and south lines. Humble Oil & Refining Co.'s No. 1 Dowdy (Fee), Survey 272, 425 feet to north and west lines, is drilling in sand at 3,558 feet. Houston Oil Co.'s No. 1 Beale in Survey 571, Block 10, northwest corner, is standing.

Jim Hogg County

Hazlitt-Simmons, Survey 16, Block 10, 150 feet from northwest corner, is drilling at 2,552 feet in No. 1 Schroder. In Block 247, 150 feet from southwest corner, Hoad and others' No. 1 Palacious is standing at 1,900 feet. O'Byrne and others' No. 1 Palacious, in southwest 40 acres of Block 14 in southwest corner, is drilling at 1,800 feet. L. M. Holden, Share 27, 2 miles south of Crestonia, 6 miles north of Hebbronville, in No. 2 Jones location, 1 mile north of No. 1, is drilling at 3,240 feet. Associated Oil Co.'s No. 1 "B" Lopez, Block 20, Share 1, of Las Animas grant, is drilling at 2,409 feet. Location is 600 feet from

Keep your wells in bounds while drilling

USE Baroid to prevent the escape of dangerous subterranean gases. When properly employed, it seals off the gas-bearing strata—keeps your well from suddenly "blowing wild."

Baroid is a form of barytes that stays in suspension. It builds a strong, durable arch—one that will stand firm against erosion. When Baroid is used, drilling becomes both safe and economical.

Baroid has wonderful sliming qualities, which make it useful as a lubricant. It covers the casing with an even film—reducing friction and erosion from cuttings.

Mud mixed with the right proportion of Baroid remains soft and fluid. This is due to the high specific gravity of Baroid. Operations in the bore, such as "fishing" the drill, can therefore be made more quickly and easily. Yet the use of Baroid adds little to the cost of your well. A tiny fraction of what you spend for equipment and labor buys enough Baroid for the whole job.

Try this test

Send for a sample of Baroid. Mix it with water. Do the same with some "mud from your slush pit." Let both mixtures stand. You will see that Baroid stays in suspension, while the other material settles out.

BAROID

NATIONAL PIGMENTS & CHEMICAL COMPANY
ST. LOUIS, MO.

He'll work with greater
EASE, SAFETY and COMFORT
with an
M-S-A STANDARD
HOSE MASK

Supplies a continuous stream of fresh air to workers in tank cars, oil tanks or in any confined gaseous space.

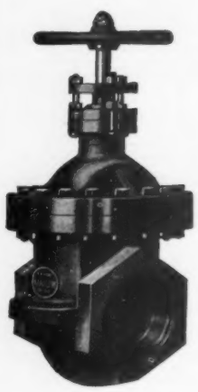
Fresh, cool air blowing over the face of the worker enables him to work for long periods in absolute safety.

Outside man operating the Blower

Standard for the American Gas Association. Send for Bulletin No. 99G for description of M-S-A Hose Masks.

Mine Safety Appliances Co.
Braddock Ave & Thomas Blvd. Pittsburgh, Pa.

L-a-s-t L-o-n-g-e-r W-e-a-r B-e-t-t-e-r!



Simplicity of operation and superior construction — both in materials and workmanship — make LUDLOW DOUBLE GATE VALVES last longer and wear better.

Repairs are seldom required on these wonderful valves but when they are needed they can be easily and cheaply made as all parts are interchangeable.

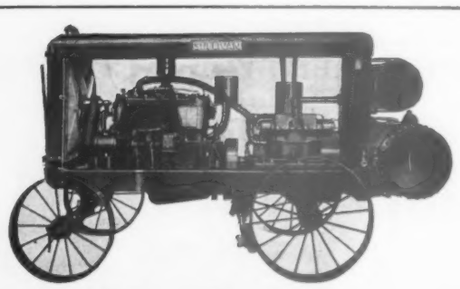
THE LUDLOW VALVE MFG. CO.

(Established 1866)

Factory: Troy, N. Y.

Branch Offices:

Kansas City, Mo.; Chicago, Ill.; Pittsburgh, Pa.; Boston, Mass.



Portable Compressed Air Plants

Sullivan Portable Compressors give you air power where you want it, when you want it. Smooth operation (due to "Balanced-V" cylinders), positive controlled lubrication, and Protectomotor air filters, keep them on the job. Capacities range from 110 to 320 feet. Mountings are steel wheels, rubber-tired trailer trucks, skids, or ready for bolting to your truck.

Write for New Booklet 1583-D

COMPRESSORS · AIR LIFT · COAL CUTTERS · DIAMOND CORE DRILLS · ROCK DRILLS
PORTABLE HOISTS · DRILL SHARPENERS AND FURNACES · BUSTERS · SPADERS

SULLIVAN MACHINERY COMPANY

NEW YORK LONDON PARIS TOKYO SYDNEY

88 EAST ADAMS STREET, CHICAGO

south line and 414 feet to west line. It made 50 bbls. of oil and small amount of gas at 2,147 feet. T. G. Shaw interests, in No. 1 Holbein, Block 21, have derrick up 1,319 feet to west line and 1,922 feet to south line.

Starr County

Danciger and Dauchy & Maddox, on Survey 232 in Judd Ranch, 980 feet to north line and 930 feet to east line, have spudded in No. 1 Newmann. Southern Exploration Co.'s No. 1 Russel, Porcion 69, Share 173-B, is drilling at 1,050 feet. Location is 150 feet to south line and 1,000 feet to west line. Simms Oil Co., in Porcion 80 and 81, Block 6, Share 38-C, 825 feet to north line and 175 feet to west line, is drilling at 1,050 feet. A half interest was sold to Magnolia. In Survey 918, Heard & McCarley's No. 1 Garcia, 150 feet from southwest corner, is moving in tools. Pearson and others, in Survey 933, in No. 1 Peffley, formerly called No. 1 Garcia, 250 feet from northeast corner, is drilling at 200 feet.

Webb County

G. R. Miller and others in Block 4, Survey 592, have derrick up 150 feet from south line and 570 feet from east line for No. 1 Garcia. R. F. Duggan in Survey 1,008 is drilling at 200 feet in No. 1 Neal. Location is 1,050 feet to south line and 1,600 feet to west line. Cresswell-Fallin, Block 1, Survey 17, is moving on for No. Gates, 189 feet to north line and 2,640 feet to east line. Cole Petroleum Co.'s No. 9 "A" Benavides, Survey 753, Block 7, is drilling at 3,700 feet. W. A. Wheatley and others in Block 7, Survey 1,618, have cored sand at 1,645 feet in No. 1 Reiser, 150 feet to north line and 300 feet to west line. Hadley-Marland's No. 1 De Spain, NE SW Survey 49, is fishing at 2,786 feet. M. J. Bashara, Block 75, Porcion 47-48-49-40 SW cor. is drilling at 700 feet. Magnolia Petroleum Co.'s No. 1 Neal, in Block 12, Survey 132, southwest of Cole Field 5 miles, is drilling at 3,715 feet. In Survey 611, 150 feet from west corner of Survey 139, Magnolia Petroleum Co.'s No. 1 Paige-Garcia is drilling at 2,400 feet. Trees Oil Co.'s No. 1 Billings, Survey 10, is dry and abandoned at 3,511 feet, 163 feet to west line and 2,146 feet to south line. Lane-The Texas Company, in city limits of Laredo, are fishing for drill stem at 3,100 feet. Yeager-Lumpkins, Quig Subdivision, Porcion 33-34-35, Block 10, has derrick up for No. 1 Yeager. Henne, Winch & Killam, NE SW, Survey 43, 150 feet from northwest corner, is drilling at 500 feet.

Zapata County

Burns & Malone's No. 1 Butimante, Block 38, has spudded in 660 feet to north and west lines. Earl K. Bateman, Block 7, Survey 617, in center of Zapata County, is drilling at 2,255 feet. The Texas Company in Cerrito Blanco Survey is drilling in limey shale in No. 3 Jennings. R. R. Clark's No. 1 Martinez in Charco Redondo Pool is moving on for a deep test.

Bexar County

George E. Ginter, on Breckenridge estate is moving in rig. W. L. McClanahan's No. 2 Sodrok, S. Pena Survey No. 9, 300 feet from No. 1, is drilling at 1,615 feet. Murphy & Thorkelesen's No. 1 Vick & Vick lease, 2,106 feet north of Corpus Christi road, is shut down at 1,580 feet. Test may be carried by someone else down to Edwards. B. F. Thompson's No. 1 in eastern Bexar County is drilling at 765 feet, where it got its first showing of oil.

Bastrop County

Johnson Brothers' No. 1 Williams, 150 feet from west line, is 40 in Serpentine at 1,612 feet and dry. Will be abandoned at 1,650 feet.

Blanco County

G. L. Jones and E. D. Summerow, in Blanco County, 1½ miles west of Pedernales River from Cypress Creek, is drilling at 340 feet.

Brooks County

Ballard & Underwood's No. 1 Lasater, Survey 331, 621 feet to north line and 150 feet to east line, is drilling at 2,450 feet after having been shut down some time waiting on milling tools.

Edwards County

X. K. Stout (Anglo-Texas) No. 2 Peterson, 2,000 feet west of No. 1, is being abandoned dry at 4,600 feet.

Gonzales County

Tom Adams and R. D. Kercheval's No. 1 Billings, near Smiley, which has been shut down waiting arrival of casing from Luling hopes to have the casing set by the last of the week. Martin Oil & Development Co.'s No. 1 Preston, near center of Pace one-third league, and near Cheapside, has a good showing of gas at 1,440 feet and is preparing to set 8¼-inch casing.

Hidalgo County

Hidalgo Oil & Gas Co.'s No. 1 Poorbough, in center of 260-acre tract, 17 miles north and 4 miles west of Edinburg, has set 10-inch casing at 110 feet.

Kleberg County

Humble Oil & Refining Co.'s No. 1-C Dennett, 360 feet east of No. 1-B Dennett, is drilling and coring at 1,900 feet; No. 1-B Dennett, 360 feet north of Kleberg trustee No. 2, has set casing at 2,016 feet. Total depth is 2,028 feet. Well has been bailed down 1,200 feet with water diminishing and 200 feet of oil on top of water.

Live Oak County

W. G. Clark's No. 1 E. S. Adair, 1 mile east of Neuces River and 1½ miles east of Lucas gas field, is moving on for test. Simmons Oil Co.'s No. 4 Sartin, north offset to No. 2, is drilling at 1,300 feet and will set and cement casing for a test.

San Patricio County

John Sigmund's No. 8 McCampbell, 1,500 feet east of No. 7, is drilling again after being shut down to clean and repair hole, while waiting on car of fuel oil.

Victoria County

Houston Oil Co.'s No. 1 Claude Keeran is drilling at 2,000 feet.

Caldwell County

Fred Adams in his No. 2 Kelly in Caldwell County, a few miles northeast of the Luling Field, topped the Edwards lime at 2,575 feet and when 20 feet in had only sulphur water. The contract calls for 100 feet into the Edwards lime and it will make that depth and then be abandoned. It hit the Edwards over 400 feet lower than in the Luling Field. Simms Oil Co. has erected derrick for No. 1 Masur 5 miles north of Lockhart on the Austin road and is moving in tools. Reiter-Foster Oil Corp. is still shut down at 500 feet in No. 1 Riddle south of Dale due to lack of water.

Guadalupe County

Mid-Kansas Oil & Gas Co. has derrick up for No. 1 D. J. Hermann in northern Guadalupe, 2 miles northeast of Geronimo. The Texas Company is drilling at 400 feet in No. 1 Hilmer Glenwinkle, southeast of Kingsbury. The J. M. Davis test on the Weinert ranch has derrick up and is waiting on a rig and for water. Davis test on the Rosenbrock farm south of New Berlin in western Guadalupe was abandoned at 1,400 feet. Pat Armstrong's test on the Dale farm west of the Luling Field is shut down for water. Most all of the tests up and down the Balcones Fault zone have been handicapped for lack of water.

Hays County

J. E. Rodgers' No. 1 Hohenburg near San Marcos is drilling at 835 feet in the Edwards lime where it has a slight showing of oil.

Karnes County

Earl B. Reynolds is setting casing in No. 2 Butler for a test at 1,917 feet. After the casing was on the seat it dropped a little which necessitated pulling it all out and running it in again. It was expecting to get casing set late last week.

LaSalle County

DeLange, Eiser Development Co. at 1,489 feet in No. 1 Dobie (fee) in southeastern LaSalle County is 4 feet in sand with pyrites of iron and is supposed to be in the base of the Yegua.

Medina County

Witherspoon Oil Co. has completed a 6,500,000-foot gas well in No. 1 Adams in Medina County a little to the east of the four gas wells of Henderson & Holden, a couple of miles south of the Ina oil field. Depth is 957 feet, steel tape measure. Western Gas & Fuel Co.'s No. 1 Adams, a half mile to the

north, had an oil showing at 1,021 feet and is now drilling at 1,200 feet and there seems to be a fault line between them. These two wells have done much to define the field though neither has been successful in finding the oil producing spot. Western Gas & Fuel Co.'s No. 2 Adams on the west side of Mondo River and west of the Adams gas wells is drilling at 700 feet. Golden West Oil Co.'s No. 1 Adams, which is north of the gassers and a little west of the Western Gas & Fuel, is drilling at 385 feet where it broke out of 40 feet of rock. Sprague and others bailed their No. 1 Redus which is a mile southeast of the Witherspoon well, and got a little oil showing at around 1,100 feet but nothing of consequence and the well is now standing.

J. H. Gray and others of Houston have the derrick up and are moving in on the Mary Neuman farm in the northeast corner of Survey No. 16 2 miles north of the Ina Field and are getting ready to spud in a wildcat test. Medina Oil Co.'s No. 8 Taylor, 4 miles south of Hondo, the second good-sized producer at around 350 feet, is pumping around 70 bbls. a day. The location was moved a little from first intentions due to the use of a mechanical device for finding oil. Wells were drilled all around the discovery well without much success until this location was made and drilled. The device is not a doodle-bug, however, since it sets on the ground and is not touched when it operates.

Pat Armstrong's No. 1 Lacey is drilling at 330 feet and is in the Buda with the first section of the log seemingly running high. It is a little northwest of Hondo. Winona Oil Co. on the King near by is drilling at 750 feet. Schermerhorn's No. 4 Irrigation company land, at 1,597 feet has drilled in and bailed but seems a failure. It is an east offset to the No. 1 Jungman that made quite a little oil at 1,646 feet at first but is now making only about 2 bbls. No. 1 Irrigation company at 1,597 feet tested the casing preparatory to drilling to the same horizon as No. 1 Jungmann. Golden West Oil Co.'s No. 1 Joseph Courand, southwest of Castroville, at 1,105 feet has shut out the water and resumed drilling. Ina Oil Co.'s No. 1 Finger on Survey No. 746, in the western part of the county, which moved on a rotary to do a fishing job, reamed down over the lost bit and got it out the first time. Total depth is 832 feet. It has resumed drilling.

Maverick County

I. N. Boicourt is starting a new test, north of Eagle Pass and near Darling in Maverick County, due to indications of a structure as shown by the tests of the Rycade and Humble. Charles Lindenborne is getting leases together and preparing to drill again south of Eagle Pass near the Connie Mack well that got quite a showing of oil.

McMullen County

The Crowther property in northeastern McMullen County is reported sold a a major company. The sale has not been confirmed. Healdton Oil & Gas Co. has spudded in its No. 1 Franklin north of Tilden on the Franklin ranch. George E. Pope of Tulsa has been drilling about one week on No. 1 Shiner in central McMullen County and is down about 300 feet. Coyle-Concord Oil Co.'s boiler on No. 1 Mat Martin in the southwestern part of the county, blew up last week, injuring the fireman, Andy Caughfield of Somerset, who had an arm broken. Depth of the hole is 1,400 feet. George M. Ball's No. 1 Kuykendall is drilling at 1,265 feet.

HOPE OF SPINDLETOP EXTENSION REVIVED

(Continued from Page 61)

the number of drilling wells. The present activity is on the west-southwest side of the cap rock district. The Yount Lee Oil Co. has production on the southeast side of the cap rock section, but its holdings are in one large block and with no offsets necessary, and drilling will be conservative.

The Rio Bravo Oil Co., a subsidiary of the Southern Pacific Railroad, drilling on the right of way of the Texas & New Orleans Railroad, claims the record for yield per acre. About two acres of the right of way have been productive, and the company has nine wells on these two acres. The first well was completed July 13, and to date the yield from the two acres has been 1,018,000 bbls. All but one of the wells are flowing, and none is below 3,200 feet.

The following is the record of the wells to date:

Well No.	Completed—	Produced	Present Production
No. 1	July 13	130,000	*1,100
No. 2	July 26	400,000	3,500
No. 3	August 1	130,000	†500
No. 4	August 24	140,000	2,300
No. 5	August 4	110,000	1,100
‡No. 6	August 24	30,500	2,600
No. 7	Octo er 7	16,000	4,000
No. 51	October 7	17,000	1,000
No. 52	September 28 .	44,500	3,300
		1,018,000	19,400

*2 per cent water. †20 per cent water.
‡Drilled into rock salt. Screen set above the salt.

W. T. Radford has charge of the Rio Bravo's operations. It is claimed the cost of production for the past month was less than 1 cent per barrel.

The following tests are drilling: On the Oakwood, the Gulf Production Co.'s No. 7 is around 1,000 feet, with a location for No. 8. No. 3 Jack-Duff is at 4,235 feet, No. 4 at 4,455 feet and No. 5 at 3,375 feet. No. 1 Mann is deepening, and No. 5 Mann is around 455 feet. No. 6-A Weed is at 3,765 feet, No. 6 is a location, and No. 7 is around 3,455 feet. No. 9 is at 3,465 feet, and No. 10 is a location. No. 6 Roche is drilling around 2,365 feet, No. 7 at 1,775 feet and No. 8 at 2,980 feet.

On its McLean lease, the Atlantic Oil Producing Co.'s No. 14 is marked as a location. No. 15 is drilling at 2,135 feet, No. 13 at 3,580 feet, No. 12 at 3,415 feet, No. 11 at 4,010 feet and No. 10 is below 4,235 feet.

The Sun Oil Co.'s No. 1 McLean is deepening at 3,346 feet, and No. 3 doing the same at 4,315 feet. No. 4 is around 4,100 feet. A location has been made for No. 5. No. 6 is at 3,165 feet, and No. 7 at 3,545 feet. The Rio Bravo Oil Co.'s No. 50 T. & N. O. is at 1,675 feet, with a location for No. 53. The Yount Lee Oil Co. has four rigs running.

The Deep Sands Oil Co.'s No. 3 Howell is drilling around 3,545 feet. W. B. Flynn's No. 1 Gladys is at 1,765 feet. Hines and others' No. 1 Ewing is sidetracking at 4,060 feet. The Grayburg Oil Co.'s No. 1 McLean is around 4,200 feet. Paggi & Co.'s No. 1 Gordon is deepening from 3,500 feet. No. 3 is drilling at 3,500 feet. Rush & Pittman's No. 1 Hammon is at 4,456 feet. The Plummer Oil Co. has a location for No. 1 Quinn. Turnbow Oil Co.'s No. 2 Banks is drilling around 2,345 feet. The Kinnear Oil Co. has a location for No. 1 Gladys. The Walker Oil Co.'s No. 1 Quinn is around 4,585 feet, the deepest test in the pool.

OIL BOARD REPORT ON SHALE AND SUBSTITUTES

WASHINGTON, D. C., Oct. 16.—The President's oil board is studying new and important data relating to the general problems of the oil industry, and, it was stated, additional observations and recommendations will be included in the board's second report, which is expected to be completed about the first of the year. This latter report will treat of conditions attending the development of oil shale and possible substitutes.

Since the completion by the board of its first report dealing with general conditions in the oil industry, many suggestions and new data have been submitted by representative oil men, which contribute informatively to the study the board is making. In rendering to the President the second report, it was said to be likely that the board will deal with certain collateral issues bearing on the general problems of the industry—problems which are arising constantly and which naturally have a bearing upon the national petroleum policy as it affects Government and public oil lands.

TANK CARS

FOR ALL PURPOSES FOR

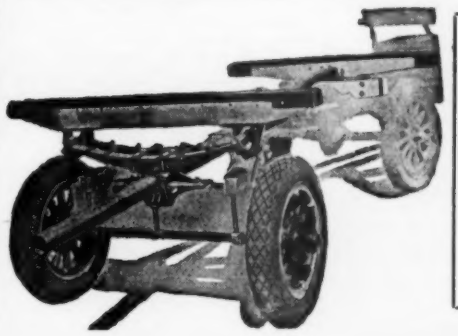
LEASE OR SALE

Substantial additions to our fleet have just been necessary in order to keep pace with the demands of our growing business.

Quick Service to All Points

Shippers' Car Line Corp'n

30 Church Street, New York, N. Y.



Nabors Non-Spring Trailer $235.00
—:—
Nabors Spring Trailer $295.00
—:—
F.O.B. Mansfield Fully Equipped

What Makes a Trailer?

To be efficient, there's something necessary in a trailer besides four wheels and a coupling pole.

The load that can be carried—and the ease with which it is carried, as well as the durability and long life of the entire unit—all this is purely a matter of scientific design and construction.

All this is figured out to minute exactness in Nabors Trailers.

Sold Through Authorized Truck Dealers

W. C. NABORS CO.

Mansfield, La.

35 CENTS
a line first insertion; 25c a line each additional insertion. Cash in advance.

CLASSIFIED WANTS

CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

LEASES—PRODUCTION

SEVEN-EIGHTS of the oil and mineral rights on 7,000-acre ranch. South Plains of Texas. Fifty cents per acre, no rentals; this is a straight sale. I. R. Williams, Rhome, Tex.

800 ACRES near Moline, Elk County, Kansas; 1 mile of 600-bbl. wells at 1,650 feet. New five-year lease, $10 per acre. Phone Mkt. 3871, 304 Orpheum Bldg., Wichita, Kans.

FOR SALE—2,800 acres in Montgomery County, Kansas; producing 40 bbls. 32-33 gravity oil per day and selling 110,000 cubic feet of gas per day at 11 cents; all well equipped and about one-fourth developed. Box 378, Cherryvale, Kans.

FOR LEASE—45,000 acres in central New Mexico, for 50 cents per acre, 25 cents annual rental. Ten-year lease. Big companies have large holdings that vicinity. Good oil possibilities. D. B. Cole, 421 Amarillo Bldg., Amarillo, Tex.

OIL AND GAS LEASE—160 acres in Payne County, Oklahoma; southeast ¼, Section 5, Township 19, Range 6. Box 143, Elgin, Kans.

FOR LEASE—Sixty-five sections in solid block in King County, Texas. Also checkerboarded acreage in Jones County, Texas. Allen Buell, Jr., Grace Hotel, Abilene, Tex.

FOR SALE—Oil lease, 320 acres, Survey 23, Block 36, Crockett County, Texas. Runs more than four years yet. L. I. Lewis, 115 N. Madison, Enid, Okla.

TO LEASE for immediate drilling, 140 acres, 2 miles north of Weleetka, Okla. A choice location with good oil surroundings. Box B-530, The Oil and Gas Journal, Tulsa, Okla.

SEND today for our attractive list of Texas leases, royalties, production and fee lands. American Lease & Royalty Co., 1508-J, Dallas, Tex.

SEE
C. O. Walling
for large blocks
to drill for oil and gas.
I sell ranch land also.
32 North Chadbourne St.,
Phone 341
San Angelo, Texas.

FOR LEASE for oil development only, 315 acres upland farm, near Erie, Neosho County, Kansas; natural gas wells on place once. For lease on favorable terms. Inquire of R. N. Cornwall, Box 235, Spencer, Iowa.

WRITE for my state of Texas oil map free. Oil leases exclusively. Reference, Mercantile Agencies.
C. W. WEBSTER
W. T. Waggoner Bldg.
Fort Worth, Tex.

AMARILLO PANHANDLE OIL FIELD

Underwriter Brainard Ranch oil and gas leases, 25,000 acres in Hutchinson County. Hutchinson County is the major producing area. New 5-year leases from 20 acres to 160 acres. Bought right, can sell at reasonable price per acre. Write for map and prices. I have handled, as underwriter, over 60,000 acres in the field on which over 80 wells are now drilling or producing. Ed R. Mayer, Amarillo Hotel Bldg., P. O. Box 1186, Amarillo, Tex.

FOR SALE—Leases and production in Warren, Allen and Barren Counties. Have leases in Barren County joining producing leases and some within half-mile to 1 mile of production. W. P. Harley, Bowling Green, Ky.

FOR SEMINOLE County leases and royalties communicate with Brown Brothers & Co., Seminole, Okla. Box 41.

FOR SALE—Choice leases in Panhandle, Texas, oil field, priced to sell. Address Western Finance Co., 7-208½ Taylor St., Amarillo, Tex.

LEASES—PRODUCTION

TWO OIL LEASES, Seminole County, Oklahoma. 80 acres, E½ of SE¼, Sec. 17, T. 7, R. 7. 40 acres SE¼ of Sec. 26, T. 7, R. 7. Box B-546, The Oil and Gas Journal, Tulsa, Okla.

HAVE SEVERAL pieces of flush and settled production for sale in Oklahoma and Wichita Falls districts. Prices reasonable and terms can be arranged if necessary. P. O. Box 1144, Dallas, Tex.

SOUTHWEST TEXAS—WINKLER, LOVING, REEVES, WARD, PECOS, CULBERSON COUNTIES
Drilling blocks. Leases. Royalties. Ranches in fee.
H. F. Anthony, Pecos, Texas.

I HAVE LEASES, 160-acre tracts up, in Lipscomb and Hemphill Counties where the big play is now on at $2 to $3 per acre. New leases made direct from owner of land to you. Dr. W. R. German, Canadian, Texas.

HAVE BUYERS for flush or settled production in Oklahoma and north Texas. Vern R. Hartman, P. O. Box 442, Dallas, Tex.

SOUTHEAST NEW MEXICO
Can furnish practically proven leases in Artesia Field, Eddy County. Also other tracts in Eddy, Chaves and Lea Counties. Particulars on request.
H. T. ORCUTT
1114 Colcord Bldg., Oklahoma City, Okla.

TEN-YEAR oil leases. No rentals. Crockett County, Texas. Send for true map. Paul Konz, Box 291, Fort Worth, Tex.

FOR SALE—Two 40-acre oil leases in Crockett County, Texas. Dr. Farmer, 402 Gibbs Bldg., San Antonio, Tex.

STRONG gas pressure in well on my 1,000-acre farm. Geologists say oil; will lease good driller. I. E. Beckum, Kilmichael, Miss.

FOR SALE
900-acre oil and gas lease, Southwest Texas. Price, $450.00. Address
P. O. Box 929, Jacksonville, Fla.

ROYALTIES—PRODUCTION

WANT TO BUY—Producing royalties. Give description, price, production, depth and age of wells; full details. Address P. O. Box 1359, Tulsa, Okla.

TEXAS PANHANDLE

Royalties in large or small units to suit any size buyer in fastest growing and most rapid developing oil field in Middle West. Write for list of offerings. B. O. Taylor, 306 Blackburn Bldg., Amarillo, Tex.

BUY ROYALTIES on core drilled structures. For same write 304 Orpheum Bldg., Wichita, Kans.

ALL OF royalty and fee, 640 acres, half mile from Roxana drilling well. Write 304 Orpheum Bldg., Wichita, Kans.

WILL BUY producing royalties direct from owner; send complete information first letter. R. H. Manning, Dan Waggoner Bldg., Fort Worth, Tex.

FOR SALE—EQUIPMENT

CASING and drilling machines for sale.
300 ft. 16" 65-lb. casing.
1,100 ft. 12½" 50-lb. casing.
2,000 ft. 6⅝" 17-lb. casing.
2,300 ft. 5⅞" 17-lb. casing.
All in good shape, used in one well.
2—No. 27 Star drilling machines.
1—4" Parkersburg drilling machine.
With mounted boilers and tools.
Cash f.o.b. cars.
MID-EGYPT GAS & OIL COMPANY
Ava, Illinois.

CASING FOR SALE
12,000 ft. 4½-in. seamless, 16-lb. casing.
10,000 ft. 6¼-in. 26-lb. casing.
6,000 ft. 8¼-in. 36-lb. casing.
This pipe practically as good as new. Pipe located Three Sands, Okla. 613 Kennedy Bldg., Tulsa, Okla. Phone 2-3052. L. D. 201.

FOR SALE—Pacific Oil Tool Hydraulic Pumping unit. Priced to sell. Bush-Voorhis Oil Co., Long Beach, Calif.

FOR SALE—EQUIPMENT

FOR SALE

One—Rathbon-Jones Engineering Co., 260 Brake H.P., 3-cylinder, 4-cycle, 260 R.p.m., gas engine directly connected to 160 KW Crocker-Wheeler, 250 Bolt, 260 R.p.m., direct current generator.

One—Westinghouse Machine Co., 150 brake H.P., 3-cylinder, 4-cycle, 260 R.p.m. gas engine directly connected to one Westinghouse Electric Manufacturing Co., 100 KW, 250 volt generator.

One — Westinghouse Electric Machine Co., 40 brake HP, 2-cylinder, 4-cycle, 300 R.p.m., gas engine directly connected to Westinghouse Electric & Manufacturing Co., 25 KW., 250-volt generator.

Parts necessary for changing above to use with natural gas, furnished free.

THE H. C. DARNELL MACHINERY COMPANY
15th & Elmwood Streets,
Kansas City, Mo.
Telephone Clifton 0113

2—150-H.p. Reeves vertical gas engine direct connected to Reeves 17x11½x13 vertical gas compressor.
2—80-H.p. Bessemer gas engines.
2—150-H.P. Bessemer gas engines.
2—165-H.p. Bessemer gas engines.
2—14x7x14 Ingersoll-Rand Type 10 compressors.
2—16x8x16 Ingersoll-Rand Type 10 compressors.
2—20x12 Ingersoll-Rand Type 10 compressors.
THE ACME EQUIPMENT COMPANY
207 Fulton Bldg., Pittsburgh, Pa.

FOR SALE
10,000 each size.
½" Iron Pipe Couplings.
¾" Iron Pipe Couplings.
1 " Iron Pipe Couplings.
1¼" Iron Pipe Couplings.
1½" Iron Pipe Couplings.
2 " Iron Pipe Couplings.
CAPITOL MFG. & SUPPLY COMPANY
550 Nichols St., Columbus, Ohio.

FOR SALE—Second hand pressure stills suitable for natural gasoline plants and storage purposes. Length 30', diameter 10', weight about 27,000 pounds, capacity 18,600 gallons. Steel riveted and welded. Manhole-top 20", end 24", bolted manhole cover. Price $400 each, f.o.b. cars, Neodesha, Kans.

ROTARY OUTFIT used two weeks, 2,500 feet drill stem, all one-half price; also 150 feet new 20-inch casing; new core drill, at one-third discount. A. O. Maltby, Manitou, Colo.

2—260-H.p. new oil engines (Fairbanks), direct connected to 219 KVA G. E. generators, 440-volt, 3 phase, 60 cycles, 210 R.p.m., with exciters, complete with air starting equipment.
1—300-H.p. new G. E. motor, 600 R.p.m., with pulley, rails and compensator, same current as generator, 6 panel switchboards with all necessary instruments.
Price $10,000 "as is where is" location Oklahoma.
EDWARD W. PETERS,
Danville, Pa.

USED LINE PIPE FOR SALE
50,000 feet 3-inch
75,000 feet 4-inch
50,000 feet 6-inch
Two miles 60-pound first-quality relaying rails.
For immediate shipment from our Texas yards.
KEYSTONE PIPE & SUPPLY CO.
315 W. T. Waggoner Bldg.
Fort Worth, Texas.

FOR SALE—EQUIPMENT

FOR SALE

The following material, part new and balance in first-class condition.

Grant and Ideal Underreamers, Cutters and Spares;
Ideal, Wilson and Lucey Elevators and Links;
Ideal Rotary Table Master Bushings;
Bearing Boxes and Gripping Device Parts;
Hughes Indicators, Baker Shoes, Rodgers Grabs;
Auger Stems, Sinker Bars, Sand Pumps;
Casing Spiders, Slips and Liners;
Casing Spears, Swedges, Splitters;
Eccentric, Spudding and Cable Tool Bits;
Drilling and Fishing Jars, Wall Hooks;
Horn, Side Jar, Friction and Slip Sockets;
Rope Sockets, Ball and Dart Bailers;
Barrett Jacks and circles;
Barrett Wrenches and plates;
Spang Rope Knives, Spang Spears;
Ideal Rope Knives, Dunn Tongs, Bushings;
Kellerman Tongs, Latch Jacks;
100-Ton Watson Stillman Jacks.
And various other items.

All of Standard Pins and for DBX Casing.
Value of lot when new about 150,000.
Desirous of disposing in one block or large quantities.
Will submit list is desired.
Box B-547, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE
One No. 30 Star Drilling Machine.
One No. 28 Star Drilling Machine.
Equipped to drill 1,800-foot wells.
Also 900 feet 10-inch casing.
1,300 feet 8-inch casing.
1,700 feet 6⅝-inch casing.
Located at Eureka, Kans.
Joe P. Cooper, 319 N. Grant St., Chanute, Kans., Phone 1310.

FIVE 12-H.P. Backus horizontal gas engines with friction clutch pulleys; excellent condition, were used to pull fans in schools this city and replaced by motors, $175 each or $750 for the lot. Box B-524, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE—28 Star drilling machine, complete. James Gibbs, Humboldt, Kans.

FOR SALE

Eight steel storage tanks 8 feet diameter by 40 feet long; located at Little Rock, Ark. Price $575 each f.o.b. cars.

Two No. 12 Sweetland filter presses. Phone, write or wire.
CONSOLIDATED PRODUCTS COMPANY, Inc.
15 Park Row New York City

FOR SALE
7 Westinghouse motors, 440 volts, 3 phase 35-15-H.p. Standard oil well pumping equipment. Price $4,900.00.
G. E. GILBERTSON,
Box 75 El Dorado, Ark.

EQUIPMENT WANTED

WANT to buy one 30 Star rig. Bryant Johnson, Shamrock, Tex.

MANUFACTURING MACHINISTS

CRAGO CUT GEARS
Worthy of your confidence. General machine work. 1416 Walnut, Kansas City, Mo. Phone Harrison 7660.

PATENT ATTORNEYS

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone send for blank form.
Evidence of Conception,
Bulletin "How to Establish Your Rights" and complete information free.
LANCASTER & ALLWINE
240 Ouray Bldg., Washington, D. C.

PATENT-SENSE — Valuable book (free) for inventors seeking largest deserved profits. References include prominent oil men. Write Lacey & Lacey, 718 F. St., Washington, D. C. Established 1869.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

CLASSIFIED WANTS

CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

POSITION WANTED

YOUNG MAN, 30, married, desires position in oil fields. Willing to go anywhere. Can run gas engines and can do all kinds of field work. Ambitious to get ahead. Therefore, will give my best efforts at all times. Write to Box B-545, The Oil and Gas Journal, Tulsa, Okla., and I will answer at once.

HIGH-CLASS petroleum engineer, graduate in general sciences and engineering (University of Pittsburgh), with 10 years' experience in foreign fields as an executive and technical supervisor, engaged for the last three years in practical field work on rotaries and cable tools, as well as in manufacturing of oil well supplies, desires connection with a large concern as field executive or representative in California or abroad. Address V. C. S., care Drilling Dept., Bin D, Taft, Calif.

CHIEF ENGINEER for lubricating oil company will be open for engagement January 1. Mechanical engineer, 16 years' experience manufacturing, selling, directing and training salesmen and service men. Exceptional experience marketing lubricating oils. Capable of correlating sales and engineering for permanent, increasing sales volume. Box B-543, The Oil and Gas Journal, Tulsa, Okla.

CAN DESIGN, build and operate plant for recovering oil from b.s. by distillation. Technical man with several years' experience. Box B-541, The Oil and Gas Journal, Tulsa, Okla.

SUPERINTENDENT — Competent superintendent for cracking stills wanted. Man of technical and practical experience; of good address. Give complete information. Box B-540, The Oil and Gas Journal, Tulsa, Okla.

POSITION WANTED—Graduate electrical mechanical engineer; 11 years experience oil field work. Electrification of pumping wells, design and construction substations for refineries and oil terminals on Pacific Coast. Past year employed as property engineer for large Mid-Continent company. Married. Best of references. Box B-534, The Oil and Gas Journal, Tulsa, Okla.

EXPERIENCED Texas lawyer desires North Texas connection with oil company. Box B-528, The Oil and Gas Journal, Tulsa, Okla.

OIL ACCOUNTANT with eight years experience both field and office, wants connection with progressive company or individual. A young man, 29 years of age, single, thoroughly competent to handle any work assigned; available immediately; nominal salary until worth proven. Box B-522, The Oil and Gas Journal, Tulsa, Okla.

MAP DRAFTING SERVICE

SPECIALISTS on attractive map work. Mail sketches and information for immediate service. Estimates and samples upon request. Rates reasonable. Kay County Mapping Service, Ponca City, Okla.

FOR SALE—MAPS

SOUTHEASTERN NEW MEXICO MAPS
Geological, Ownership and Sectional.
Write for folder
M. H. HUNTER CO.
Roswell, N. Mex.

HOTELS

TEXAN HOTEL—Pampa, Tex.; all conveniences; reasonable; heart of Panhandle Oil Field.

LETTERHEADS PRINTING

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

CONSUMERS' LEDGERS
We are prepared to furnish from stock standard forms of gas meter Consumers' Ledgers. Sample forms and quotations on request. First-class material and workmanship.
DERRICK PUBLISHING CO.
Oil City, Pa.

For Oil Men Everywhere

Since early in the present century The Oil and Gas Journal has grown from a small magazine to the greatest petroleum publication in the world.

Today it has a wide range of interested readers from executives in elegantly furnished offices to drillers in sun-baked thatched huts in far-off tropical islands.

Although the number of readers has increased greatly since the early days, the price for classified advertising has advanced but slightly, because The Oil and Gas Journal maintains this section as a service to oil men everywhere—a market place where they may buy or sell oil leases, production, royalties, properties, equipment or service of any kind.

Let the readers of The Oil and Gas Journal know about your product, property or service through a classified advertisement and you will get the desired results.

Mail your ad now so that it will be in next week's issue.

The OIL and GAS JOURNAL
PRODUCING REFINING MARKETING
TULSA, OKLAHOMA

HELP WANTED

STEAM SPECIALTY SALESMAN

Wanted to represent us in open territory. Good commissions.

FRANCE PACKING CO.
6510 Tacony St., Philadelphia, Pa.

MONEY RAISING

DEPENDABLE
FINANCING SERVICE
Results sure, swift, economical. Employ the One Great Plan—the plan that gets money. Avoid abortive "mail order" and "phony" broker schemes. Describe proposition. Hansel Financing Specialits. 212-GE Earlham St., Pittsburgh, Pa.

DO YOU NEED MONEY for organizing or financing oil or mining deals? Write 117 E. 10th, Oklahoma City, Okla.

ADVERTISING RATES

	1 Time	2 Times	3 Times	1 Mo.
3 lines	1.05	1.80	2.55	3.30
4 lines	1.40	2.40	3.40	4.40
5 lines	1.75	3.00	4.25	5.50
6 lines	2.10	3.60	5.10	6.60
7 lines	2.45	4.20	5.95	7.70
8 lines	2.80	4.80	6.80	8.80
9 lines	3.15	5.40	7.65	9.90
10 lines	3.50	6.00	8.50	11.00

(Six words usually make a line.)
Compute white space at the above rates
Mail your advertisement to
THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

FINANCE your project with stock bonded. Quickest and most satisfactory known method of raising capital. Information free. Bankers Interstate Security, Electric Bldg., Denver, Colo.

WANTED

WANTED—Party to drill on 250 acres with option on 1,000 acres more near Los Angeles. Dr. Vanderlinde, 1501 S. Figueroa, Los Angeles, Calif.

WANTED—WET GAS CONTRACTS
Interest in profits or overriding royalty for gas contracts. Give volume and gasoline content. Letters confidential. P. O. Box 147, Station C, Los Angeles, Calif.

WANTED—Live energetic broker to handle substantial stock issue of $100,000. Have production. Our properties practically adjoining 1,000-bbl. producers (initial) backed by wealthy oil producers. Address Box B-548, The Oil and Gas Journal, Tulsa, Okla.

WANTED—Royalties on settled production, priced right. 304 Orpheum Bldg., Wichita, Kans.

WANTED—Leases, royalties, production or lands in fee, anywhere in Texas. American Lease & Royalty Co., 1508 J, Dallas, Tex.

PARTIES who know farming and farmers, and who have secured and can continue to secure actual settlers for farms in Mexico, want party or parties with cash to finance own colonization company. Small working capital needed, investment safe, profits attractive. Remember, it was first Los Angeles, then Florida; now it is Mexico. Write P. O. Box 1064, El Paso, Tex.

WANTED — Drillers with standard outfits for drilling. We have several drilling contracts right in proven field, for quick action. Have large blocks in Texas and Oklahoma. W. L. George, Box 1123, Amarillo, Tex.

BUSINESS OPPORTUNITIES

TWENTY-ACRE quartz claim covered with beautiful pine trees, 1 mile from large lake; must sell at once; $1,200 will buy it. 226 Olive St., Walnut Park, Calif.

WILL TAKE INTEREST
in drilling wells in fair locations to the extent of furnishing entire pipe of various sizes required in the well, taking back 50 per cent of value of the pipe in interest in the well, to be apportioned against the amount of total investments. In offering your proposition state in fullest detail, location, quantity of pipe and sizes required, also your personal opinion of location. Do not answer unless you are one of the actual principals in leased properties or drillings. Address William Doyle, P. O. Box 1224, Buena Vista Station, Miami, Fla.

PETROLEUM prospectors, geological, will select, secure drilling contract upon and test wildcat acreage for you at cost, taking part of acreage so secured as compensation. Nicolle & Wife, Box 644, Corsicana, Tex.

TWO 160-acre tracts, sure shot for production, good market for either oil or gas; sell outright, but would rather let on drilling contract, or sell half interest and go 50-50 develop same; depth 850 feet. Box 378, Cherryvale, Kans.

UNUSUAL OPPORTUNITY
Will give acreage on well-defined structure in Smith County, Texas, (located by successful geologist) to responsible party to drill. Acreage already blocked. Address Oil Man, 308 Worth Bldg., Fort Worth, Tex.

FOR an honest straight-forward speculation involving small amount cash and possessing unusual profit possibilities, write immediately, P. O. Box 1064, El Paso, Tex.

CAPITAL—An experienced dependable broker with following will give personal attention to financing of worthwhile proposition. B. W., 810 Broad St., Newark, N. J.

DEVELOP YOUR OIL PROPERTIES
Sell stock, units or leases quickly, economically. Square shooters only need give details; 25 years' experience behind plan. Northcliff, 28 W. 44th St., New York, N. Y.

WEEKLY OIL REPORTS on operations in Upton, Crane, Winkler, Ector and counties near Midland, Tex. Midland Reporter, $2 a year.

FOR SALE or rent, brick building, 1-story, 100 feet square, 140-foot trackage, located in Tulsa, only 4 blocks from main business district. Very desirable for oil well specialty house. R. E. Kimsey, 726 W. Fourth St., Tulsa, Okla.

RANCHES—FARM LANDS

OIL PROSPECT FOR SALE
1,960-acre ranch 5 miles S. W. Harrison, Neb. Geologically pronounced highly prospective oil land. Will sell for $20 per acre. Purchaser can treble money in three years. H. L. Weiner, 855 W. 62nd Place, Los Angeles, Calif.

SUMMER RESORT on Gasconade River, 7 miles from railroad, on U. S. Highway No. 66 from St. Louis to Joplin, Mo.; 50 acres, 14-room residence, 10 cottages, garage for 12 cars, electric lights, one-fourth mile river front, 16 boats, good water; $16,000. Holt Realty Co., Lebanon, Mo.

TEXAS RANCH $3
Line of Jeff Davis and Culberson Counties, on railroad, improved and watered as a ranch, good oil prospects, now stocked with 2,000 white-faced cattle. Price $3 bonus. Requa-Redus Land Co., San Antonio, Tex.

"NOW LAFF, Darn Ye," 35,000 acres good timber land in the beautiful, pleasant Ozarks, $5 acre; free folder. Write U. S. Barnsley, Ozone, Ark.

IMPROVED Colo. ranches, $3 to $5 acre; bargains. A. Brown, Florence, Colo.

INCORPORATIONS

DELAWARE incorporators. Charters fees small, forms. Charles G. Guyer, 901 Orange St., Wilmington, Del.

MORE ACTIVITY IN CHICAGO MARKET WITH STOCKS REPORTED VERY LIGHT

By J. B. Waldo

CHICAGO, Oct. 16. — The better weather has brought a little more activity to the gasoline market, but little change in conditions generally. Orders have come in, most of them small, asking for early delivery. There is a stronger demand for car numbers than for car lots. The consumption is probably somewhat ahead of the demand from the distributors who are waiting for a tankwagon decline.

One sales manager suggested jobbers had movable bottoms to their tanks. During the summer a jobber with 40,000 gallons storage would wait until he was down to the 20,000-gallon level and then order. The bottom then was at the 20,000-gallon line. But now he is right down on the real bottom. Numerous cases have been reported where country jobbers have delayed until they were actually out of gasoline and had to borrow. There seems no doubt stocks of gasoline in the country are low compared with stock on hand during the active season. Stocks in the field are also said to be light.

There has been no pressure to move stocks and had it not been for some outside cutting of prices this market would have held at not under 10 cents. Refiners generally here held for at least that price. But there were some sales reported from jobbers able to buy U. S. Motors gasoline at 9¾ cents. Right now refiners here are quoting 10 cents and trying to get it, but rather than lose business from good customers they will meet competition from responsible concerns down to 9¾ cents. This is stated to be the absolutely lowest price made for real U. S. Motors gasoline. In some cases the quotation of 9¾ cents has been made under special circumstances which the seller argues justifies the prices. For example the order for 25 cars of Motors gasoline by the Benzolene Co. was taken by the Empire Refineries at 9¾ cents. The argument is that this is not a cut price under the circumstances for it was made practically on conditions that are made for resale as to quantity and terms and that it was all consumed by the buyer and was not offered for sale and did not compete with other gasoline in this or any market. The quantity and terms, practically cash, would make a lower price than the price for a single car or even five cars reasonable. But this is one of the peculiarities of oil men that they cling to the practice of one price to everybody and for any amount, at least in theory.

Cut Discounted

The belief here is that if the tankwagon reduction does come this month, as it may, it will not have much effect on refinery prices. Refiners claim the present refinery quotations discount both a tankwagon cut of 1 cent and a crude cut of 25 cents. They contend that at 10 cents there is no money in the refining of motor gasoline and with present crude costs 11 cents is only a fair price. They claim a reduction in the cost of the raw material is the only factor that can justify a reduction in selling price. A cut in tankwagon price does not reduce refining costs and is made usually because the margin between the price to the public is so wide as to invite price cutting.

The demand continues to be almost entirely for the U. S. Motor grade. There is very little inquiry for the 56-58 450 end point. Some is moving on contracts as some jobbers are able to do business the year round on this gravity. One in Detroit recently made the statement there had never been a gallon of higher gravity than 56 58 450 in the plant or at the stations. The demand for the higher gravities is a little better. There are more inquiries and a little more business but the real winter demand has not set in. Prices are a little lower. The demand for the antiknock or better gasolines continues and some refiners state they have as much business on this product under contract as they can produce with present equipment. There is a question what effect the introduction of these cracked gasolines will have on the sale of the higher gravities. There are numerous concerns that have built up a large business on some individual brand which is usually a 60-62 400 or a 64-66 375. For the former many charge 3 cents per gallon and for the latter 5 cents per gallon more. The Texas Company is putting out its antiknock gasoline at the normal station price. Most of these gasolines, especially where advertised, are sold at 3 cents above. Many believe that in the long run the price of these new fuels will drop back to the normal station price but as the supply is limited it may enable sellers to hold present prices, particularly if the gasoline proves its worth in cold weather. The market for natural gasoline has declined quite sharply here and business is very quiet.

Kerosene Quiet

Kerosene has been quiet. The decline of 1 cent in the tankwagon market, effective on Wednesday, had little result so far as refinery prices are concerned. The market declined for the 41-43 gravity from 7¼ to 7 cents at most and there were some quotations out at the 7-cent price before the change was made. Stocks are not large and production small. The steady demand for distillate is helping to hold the kerosene market. No special change is looked for, although a heavy consumption of distillate may cause an actual shortage of kerosene when severe weather comes.

Distillate Strong

Distillate is really the only strong article in major refinery products. There is a steady movement to the country and city distributors. Some oil men state the installing of oil burners is making more rapid progress in the country districts than ever. One man who recently toured Wisconsin said that in one small town near Milwaukee he noted every house under construction had an oil burner tank ready to be installed and many older homes had tanks waiting in the yards. This is the most active season for installing oil burners. Local furnace oil distributors report a good business though some say the first rush is over and the next great rush will be at the first really cold spell.

Gas Oil Firm

Gas oil is not moving steadily to the industrial users but the demand for furnace oil purposes is sufficient to make a steady market. The supply is larger than of distillates of desirable quality. One refiner reports the sale of 100 cars of gas oil to a gas company at 4⅛ cents but this was the only large sale reported and most buyers are still ordering from hand to mouth. The supplies of cracked gas oil are rather large but the prices are firmly held and holders are willing to wait for the demand. There is a feeling prices should be higher but it is difficult to secure any regular business above the present.

Fuel Oil Waiting

Fuel oil is described as "dragging" by some and as "stagnant" by others. Buyers seem to be waiting for lower prices and in the meantime their takings are governed by their actual requirements for prompt use. Very few larger industrial users will contract ahead on present prices. They feel a decline in crude is imminent and with it lower prices for fuel oil. Of course the one does not necessarily follow the other and with the present large consumption the market might hold were it not that there are some refiners anxious to secure business to relieve them of carrying their accumulations. These stocks are all in the heavy oils, below 24-26. For that and the higher gravities the demand is active and supplies light. One large refiner has reduced the quotation on 18-22 fuel oil to $1.25 but others are selling at sufficiently less to make it hard to move this particular stock.

There is no change in the Smackover situation. The supply of treated oil out of steel storage is pretty well under contract and stocks are strongly held with prices ranging from $1.30 up to $1.35, though the latter price is not generally obtainable. There are sales reported as low as $1.25 but it is claimed they are not fully treated and in some cases are little better than the crude from dirt storage. Buyers, who are becoming better posted, object to this oil for industrial use. It can be used for some purposes. Some cheap crudes from other fields are also sold occasionally as Smackover.

Lubs Routine

Lubricating oils show little change. The demand for zero oils is growing with the season and some refiners report a good demand both in car lots and in less than car lot shipments but the business is largely routine.

The tankwagon situation is made more perplexing for jobbers by the reduction announced by the independent dealers of South Dakota, 1 cent a gallon. Up to this writing the Standard and other large companies have not authorized any change and may not do so. If maintained by the independents generally it is expected the cut will spread but much depends on what takes place in the refinery markets. Should they respond to the South Dakota cut by reductions in the tank car prices at the refinery without a crude cut, the situation would seem to favor a general reduction. So far there has been no intimation of a general reduction in the tankwagon scale. Still it is recognized that the wide spread between refinery costs and the tank wagon price affords opportunities for price cutting. There are many jobbing accounts where the credit limit is a certain number of cars. This forces those with less financial resources to keep their stocks moving or go without. There is a very strong impression that the larger companies who cover the territory would like to hold prices over the month, and gradually secure a more stable market.

RESISTANCE TO PRICE REDUCTIONS FELT IN ATLANTIC COAST MARKETS

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 543, 30 Church St., New York City

NEW YORK, Oct. 18.—Despite continued talk of reduction in gasoline prices and in crude, actual cuts have been comparatively few during the past week. Atlantic Refining Co., which cut the price of gasoline in Boston a few weeks ago, has now reduced its tankwagon schedules in Pennsylvania and Delaware. The New York and New Jersey Standard companies have taken no broad action, however, in reducing tankwagon prices. Local reductions have been put into effect in certain of the smaller cities, but that is all.

There still remains, however, the threat of California gasoline, purchases of which by eastern refiners, have been large. It now seems probable that this influx of California gasoline may not cause a reduction in the market, especially since weather conditions have been favorable during the past two weeks. But it is still too early to say that California gasoline will not prove an adverse factor.

There are indications of firmness in all refined oil markets on the Atlantic Coast. Although Standard Oil Co. of New Jersey reduced bunker oil 10 cents a gallon over a week ago, this cut has not been followed by its competitors. There seems to be solid resistance all along the line to price reductions.

Furnace Oil

Furnace oil has been reduced 1 cent a gallon by the Standard Oil Co. of New York, but this cut is not looked upon as unfavorable for two reasons, one, that the total gallonage of this product sold is still small; two, that a reduction in price is apt to stimulate consumption and is a good combatant to the propaganda that the oil supply is about to give out at any moment and that prices are going to skyrocket.

Kerosene

Kerosene is steady. Standard Oil of New York is still maintaining a tankwagon price of 18 cents a gallon throughout its territory, which is the peak price of the year. Early this month the Jersey company reduced its tankwagon price 1 cent to 16 cents. Standard of New York will probably follow this reduction in the near future.

Gas and Fuel Oil

Both gas oil and fuel oil are in fairly good demand. There has been some improvement in gas oil due to better demand from gas manufacturers, and the apparent desire of refiners to carry on large "cracking" operations this winter.

Diesel oil is unchanged in price and the demand continues good.

Bunker fuel oil is firm. It would not be surprising if Standard of New Jersey restored its former price of $1.75 a barrel at New York, as its recent reduction has not been met generally by competitors.

Lubricants Unchanged

The market for lubricating oils is quiet, with industrial buyers not as active as could have been expected at this time of year. They are following a waiting attitude. Spindle oils are showing a slightly better tone than other departments.

Paraffin Wax Lower

The local paraffin wax market is dull. Demand from both domestic and foreign sources has been disappointing. Further weakness is revealed by a further shading in prices asked for the higher melting points, which have been reduced one-eighth cent a pound to the lowest levels established this year. Wax of 120-122 American melting point remains at 5⅝ cents, but 125-127 is now bringing 5¾ cents, 130-132 is quoted at 6⅜ cents and 135-137 at 6⅝ cents.

Petrolatums Improve

Although dark green petrolatum has been shaded slightly to 1⅞ cents, other grades have been advanced ¼ cent as a result of a considerable improvement in consumption. Amber is now quoted at 3⅝ cents a pound (carload lots), extra amber at 3¾ cents, cream at 5⅝ cents, lily white at 7⅝ cents and snow white at 8⅝ cents.

This is the first real improvement in petrolatum in some time to be reported by local dealers, and they hope for further advances in the near future.

The Export Market

Bulk export prices were reduced a half-cent Monday.

Gasoline and kerosene shipments during the week ended October 13, were heavy, this being the third good week in this respect. Bulk shipments of gasoline totaled 3,395,105 gallons and case shipments 980,000 gallons, a total of 4,375,105 gallons. Exports of kerosene were large, amounting to 3,277,529 gallons in bulk and 4,237,140 gallons in cases, a total of 7,514,669 gallons.

Exports of petroleum asphalt continue to hold up, the total for the week ended October 13, being 1,933,725 pounds. One large export shipment of petroleum coke took place, amounting to 2,200,000 pounds.

Lubricating oil and wax shipments are not continuing as heavy as during previous weeks. Bulk demand for lubricating oil is fairly heavy but both barrel and case shipments are tending lower. The bulk demand comes largely from Europe.

American oil continues to hold its supreme position in the European markets

despite increased competition, including that from Russia, according to local exporters. Russia is said to be very active in opening up new connections in the European countries, but this competition is affecting European independents more than the American companies, which, with their abundant supply and high quality of material, are easily able to meet Russian competition.

The following table shows principal exports of petroleum and petroleum products from New York during the last three weeks (figures in gallons unless otherwise noted):

	Week Ended		
	Oct. 13	Oct. 6	Sept. 29
Gasoline:			
Bulk	3,395,105	1,798,229	6,200,108
Barrels	.....	166,450	86,300
Cases	980,000	1,354,280	1,862,150
Kerosene:			
Bulk	3,277,529	2,132,049	6,297,539
Cases	4,237,140	872,680	3,849,230
Gas oil:			
Bulk	.....	1,852,989	452,025
Fuel oil:			
Bulk	.....	1,128,592	.....
Lubricating oil:			
Bulk	2,324,770	311,282	.....
Barrels	924,400	1,562,050	684,300
Cases	63,770	324,120	256,830
Lubricating grease:			
Barrels (lbs.)	.....	679,950	589,050
Paraffin wax:			
Bags (lbs.)	1,303,500	1,559,360	848,100
Barrels (lbs.)	.....	972,800	669,750
Petroleum asphalt:			
Barrels (lbs.)	1,933,725	1,738,500	237,500
Bulk	.....	303,970	.....
Petroleum coke:			
Bags (lbs.)	2,200,000	.....	1,232,000

The foregoing figures include shipments of 500 bbls., 1,000 cases, or more.

Tanker Market

The tanker market is somewhat more active. The recent decline in business apparently has not been attended by lower rates. This indicates fundamental soundness in the market.

New fixtures include the following:

Tanker Arti Mendi (Span.), 2,300 tons net, North Atlantic to United Kingdom-Continent, clean oil, 24s. 6d.

Tanker Watertown (Am.), 3,097 tons net, Gulf to two ports, north of Hatteras, gasoline and kerosene, November loading (terms private).

Tanker Hera, 2,912 tons net, Gulf to United Kingdom-Continent, gasoline and kerosene, 27s. 6d., one port, October loading.

Tanker Agwisun, Venezuela to New York, crude oil, November loading, 36 cents a barrel.

Oil Receipts Lower

Receipts of crude and refined oil at Atlantic Coast ports for the week ended October 13 are estimated at 2,946,000 bbls., a daily average of 421,000 bbls., compared with a total of 3,427,000 bbls., and daily average of 490,000 bbls., the week ended October 6.

While aggregate receipts decreased, imports increased, those from Mexico averaging 71,000 bbls. a day, against 68,000 bbls. the preceding week. Imports from South America increased from 24,000 bbls. a day the week ended October 6 to 59,000 bbls. a day the week ended October 13.

Receipts from the Gulf Coast fell from a daily average of 315,000 bbls. for the week ended October 6 to 247,000 bbls. a day; receipts from California decreased from 82,000 to 45,000 bbls. a day.

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic Coast ports for the past three weeks; also monthly record for the past 12 months (figures in barrels):

Source—	Week Ended		
	Oct. 13	Oct. 6	Sept. 29
Gulf Coast	247,000	315,000	308,000
Pacific Coast	45,000	82,000	70,000
Mexico	71,000	68,000	108,000
South America*	59,000	24,000	52,000
Total	322,000	489,000	538,000

Daily Averages by Months					
1926:	Gulf	Pacific	Mexico	So.Am.	Total
Sept.	299,000	98,000	63,000	58,000	518,000
Aug.	326,000	61,000	71,000	46,000	498,000
July	360,000	66,000	115,000	36,000	577,000
June	396,000	104,000	117,000	18,000	635,000
May	318,000	66,000	114,000	25,000	523,000
April	326,000	92,000	126,000	20,000	564,000
March	317,000	97,000	152,000	26,000	592,000
Feb.	332,000	73,000	104,000	18,000	527,000
Jan.	279,000	59,000	65,000	31,000	434,000
1925:					
Dec.	298,000	56,000	90,000	13,000	457,000
Nov.	259,000	36,000	80,000	12,000	387,000
Oct.	249,000	36,000	80,000	22,000	387,000

*Including Trinidad.

The foregoing estimates are based on the carrying capacity of incoming oil-laden tankers.

ARTESIA, NEW MEXICO

(Continued from Page 62)

Corp.'s No. 14 in SW NW, Section 28-28 28, shut down at 2,240 feet awaiting repairs; Navajo Oil Co.'s No. 2, SW Section 28-17-28, drilling below 1,700 feet; Ohio Oil Co.'s No. 7 Toomie, Allen, SW SE Section 28-18-28, drilling below 2,160 feet; Phillips & Welch's No. 1, SE cor. NE SW Section 18-18-28, drilling below 1,900 feet; Pueblo Oil Co.'s No. 1, NE SW Section 33 17-28, on production; Rehn and others' No. 1 Winans, NW NE Section 6-18-26, on production; Sun Oil Co.'s No. 1, Section 21-25-30, drilling below 2,800 feet; Skelly Oil Co.'s No. 1, NE Section 22-17-31, capped, awaiting adjustment title; Bruce Sullivan's No. 1, SW Section 1 18-31, running casing at 2,465 feet; Wooley-Jones' No. 1 Beeson, Section 33-17-30, shut down at 3,300 feet; Wooley-Jones' No. 1 McIntyre, C SE Section 21-17-30, rigging up; Williams Petroleum Co.'s No. 5, Section 17-18-28, drilling below 1,400 feet.

Chaves County

Etz, De Vito's No. 1, Section 24-11-25, drilling below 850 feet; Gibson Oil Co.'s No. 1 Forsyth, C NE Section 8-11-23, hole abandoned at 690 feet, rig skidded 50 feet north; Hall's No. 1, NW Section 8-14-24, setting 8 inch casing at 833 feet; Rogers' No. 1, SW NW Section 14-11-26, on production; The Texas Company's No. 1 Dunken Dome, SW Section 29-17 18, drilling below 2,110 feet.

Lea County

Cap Rock Oil & Gas Co.'s No. 1, SE Section 11-16-32, drilling below 700 feet; J. S. Covert's No. 1, Section 15-21-33, shut down at 1,100 feet, 10-inch casing parted; Exploration Co.'s No. 1, NE Section 25 19-35, spudded in; Henderson,, Dexter & Blair's No. 1 Wyatt, SW Section 34-17-33, drilling below 800 feet. Inglefield and others' No. 1, Section 4-17-34, pulling pipe; Maljamar Oil & Gas Corp.'s No. 1, SE Section 16-17-32, drilling below 1,050 feet; Maljamar Oil & Gas Corp.'s No. 1 Grace Mitchell, SW Section 5-17-32, drilling up casing shoe at 700 feet; Mescalero Petroleum Co.'s No. 1 Jennie Hughes, Section 27-19-38, drilling below 650 feet; T. P. McDonald's No. 1, NE Section 22-18 34, fishing at 700 feet; Ohio Oil Co.'s No. 1 Pearl Miller, NE NW Section 35-17-32, rigging up; Ohio Oil Co.'s No. 1 William Mitchell, NE SW Section 18-17-32, drilling below 2,515 feet; Prairie Oil & Gas Co.'s No. 1, NE NE Section 34-18-32, location.

PENNSYLVANIA MARKET DISCOUNTED REDUCTIONS

OIL CITY, Pa., Oct. 16.—The feature of the week in Pennsylvania refined circles was a reduction of 1 cent in tank-wagon quotations for gasoline in Pennsylvania and Delaware. Tankcar prices were softer, but they did not slip anywhere nearly as much as the 1-cent retail reduction due to the fact that it had to a great extent been discounted in advance. Demand for gasoline continued as good as on the previous week, every bright day bringing a considerable increase in consumption over those not suitable for motoring.

Kerosene is softer and in fair demand. Fuel oil is holding its own in a pretty strong position. Neutrals are holding up fine, the demand continuing good and the prices being unchanged. There was no improvement in the bad position held by unfiltered cylinder stocks. Filtered goods were the same as previously with a slightly softer tone to bright stocks due to the fact that refiners are beginning to catch up with their orders. The demand for wax was less during the week.

HUMBLE FIELD SUIT POSTPONED

AUSTIN, Tex., Oct. 16.—Trial of the State's suit seeking recovery of title to land in the Humble oil field has been postponed in Travis County District Court from October 25 to November 25.

METERS

PITTSBURGH METER CO.

For Measuring Production and Distribution of

OIL, GASOLINE, GAS and Other Fluids

PITTSBURGH METER CO.

General Office and Works: 7800 Susquehanna St., Pittsburgh, Pa.

SALES OFFICES

New York Chicago Kansas City Columbia, S.C. Seattle Los Angeles

New

Independent Oil Booklet

This Booklet contains description of properties, latest financial statements, dividend records and other important information regarding this group of companies.

Copy upon request

CARL H. PFORZHEIMER & CO.

(Specialists in Standard Oil and Miscellaneous Oil Securities)

25 Broad Street New York, N. Y.

Inspect Equipment Before Operation

Obtain Best Results in Natural Gasoline Manufacture When Mechanism Is Thoroughly Tested Before Regular Operation Starts

By Frank B. Peterson

Coincidentally with the setting of meter equipment, orifices and recording gauge instruments, the assembly and placing of laboratory equipment ready for service, the locating and installing of plant instruments of every character, the other work of preparation for starting of operation will be carried on. In this there is wide diversity. Some considerable portion of the work will have been done by the forces of construction in conjunction with those of operation; such, for instance, as the testing of many of the elements of container equipment for leakage. A good construction superintendent will not turn over his handiwork until it is tested thoroughly to and beyond the range of working pressure at which it will be required to function in operation. But even in well organized construction the average large plant will round out to completion with many elements of work closing almost at one and the same moment. Ordinarily a rush condition will develop at the "eleventh hour" and, in spite of the best intentions otherwise, numerous untested details will pop up.

Shutdown Interruptions

The forces of operation, as they are assembled, will do well to bear the foregoing well in mind. Nothing can be more annoying than shutdown interruptions for the repair of leaky equipment, and it is a rare case that the first trial of any material assembly of equipment for manufacturing purposes can escape such shutdown. And in the large absorption plant so wide a diversity of equipment is called for as to make this more particularly true. In the process directly, we require the machinery and its complement of separators, coolers, stills, condensers, absorbers, receivers and storage of gas and product resulting. The equipment for gas handling really comprises four stages of compression, beginning, in most cases, at one extreme of high vacuum and ending at a final pressure in the other of as much as 200 or 250 pounds pressure per square inch, a ratio of final to initial pressure of as much as 166. Since most things are measured by comparison, it is interesting to note that the ordinary industrial requirement for compressed air requires only a ratio of final to initial of about 6, and for the liquefaction of air only about 100.

Incident and as auxiliary to the handling of gas, we require steam all the way from full boiler pressure (and even to good advantage superheated) to low pressure and vacuum condensation; compressed air to a ratio largely in excess of the ordinary requirement, electricity at least for a comprehensive lighting scheme, various and sundry automatic controls, regulators, reducers and governors which, in their application, will call for a high degree of skill and understanding on the part of the operative forces in whose care they fall.

Testing Engines

Engines and compressors, as soon as they are set and tied to hardened foundations, should be turned over to operative forces. These engines and their compressor complement should be tried out thoroughly on air. Loose joints and leaks will be immediately detected and corrected and compressor operation on air will not be attended with the dangers that would be involved in the handling of gas under trial conditions. As soon as initial defects are discovered and corrected, the engines and compressors should be thrown right onto 24-hour operation. A week or two weeks of continuous operation under full load is not too much. Overheating of pistons, bearing adjustments, correction of packing defects, proper consumption of lubricating oils will all be brought to the surface and properly treated. Manufacturers almost invariably send erectors expert in the setting and adjustment of their large engines, but these men cannot be infallible in their work, and often, just after they have departed, trouble begins.

SIXTH ARTICLE

The accompanying article deals with the importance of operators testing all equipment at natural gasoline plants after the construction work is completed and before settled operation starts. The writer points out that operating difficulties will be lessened and the life of the equipment lengthened if the operators make sure that there were no defects in the construction of the plant. The difference tests which should be made, are explained.

This article is the sixth of a series by Mr. Peterson, an operator in the Mid-Continent Field, dealing with all phases of operation in natural gasoline manufacture. The fifth article appeared in the September 2 issue.

And it is appropriate to say that in every undertaking of such magnitude as we are discussing there should be numbered among the operative forces an engine man of skill and experience equal to that of the manufacturer's representative. An engine indicator should be at hand. It will not be necessary to use it on every engine, or every compressor. But there is scarcely a case of large installation where, intelligently used, it will not pay for itself by eliminating quickly a string of troubles common to one or more machines and otherwise difficult of location. To the engine man his indicator is his clinical thermometer, so to speak, and how would the doctor begin without the latter?

A recent compressor case developed of restricted valve area; another of fouled engine fuel transfer ports. We may be prone to think these things will not occur over and beyond the vigilance of the manufacturer and his test floor. But, on the insistence of the user for rush delivery, they do occur. Time and delay in operation are to be saved to extent of many times the value of adequate checking and corrective instruments in the operation of big machinery, or of small machinery where it is liberally used.

Making Over Equipment

Incidentally, no small credit is to be given to the group of operating forces that show, so often, a record of surprising results in machine efficiencies in these large plants. Their keen sense of perception is to be commended and appreciated when, most frequently, they apply it unaided and unsupported by other than their native intelligence and determination to "get results." I have in mind large engines which have been completely overhauled and rebuilt on the job by plant forces and made to deliver considerably in excess of the manufacturer's rated capacity; to perform smoothly and perfectly as new machines should do, after the old frames have done a normal and reasonable life of duty. Of course this speaks well, also, for the manufacturer's end of it, since inferior equipment could not lend support to such effort.

Testing for Leaks

The preliminary trial operation of engines and compressors gives the field forces the requisite supply of air under pressure for testing of lines and all field connections. Frequently gas may be available for this purpose. Air is better, especially where welded lines are to be tested. Many burns are sustained where acetylene is employed in the construction or connection of gas lines.

Of equal importance in trial tests are boilers and all steam line equipment. The former should be tested under fire to the full manufacturer's rating of pressure. This test need not be prolonged for more than a few hours, but while the test pressure is being applied a rigid inspection should be made. If leaks develop, and they are most likely to after the stresses of handling and setting, they should be stopped and the boilers retested.

This is the time, also, to test carefully and systematically the pop valves and to set them to their required working pressure. Steam lines, unless intelligently designed and installed, will give a world of trouble from the stresses of expansion and contraction from wide temperature variance. The time to find and correct the defects is the preliminary trial time before starting operation. Even the heating system should be installed and tried out. The discomfort will not be much added to that of summer weather, should it be out of season, and the satisfaction of knowing it is right is also profit in the long run.

Stills Important

The testing of stills is of vital importance, first under water to a limit of pressure at least three times as great as for normal operation, then under fire with the water to the same range of test pressure in which steam is generated freely; and, finally, with the absorbent oil in circulation to the designed operating pressure and to a temperature somewhat in excess of that at which the stills are expected to operate.

All the receivers, scrubbers, absorbers, accumulators, stock tanks, coolers, condensers, exchangers, etc., should, of course, have a preliminary test to tightness with air and at a pressure as much as 50 per cent in excess of that at which they are intended to operate. Subsequently, in the trial test of stills and boilers the tests of these details should be extended to a range of temperature and pressure also in excess of that at which they will work. It will be surprising how many leaks will develop for final correction under the effect of temperature expansion. All these will be corrected prior to operation with much attendant satisfaction.

Defective Packing

One of the persistent and recurring annoyances of initial plant operation is packing. Packings which have been entirely successful in other and previous installations seem to fail in the new one. Some, no doubt, of this difficulty may be due to lack of skill or experience on the part of the forces who apply the packing. Especial care will, consequently, be exercised in the selection of the man force to do this first job of packing. Granted that the packing may be right, much good machinery may be damaged by lack of knowledge of how to use packing. Rods and shafts may be so scored and cut that, while they may not have to be replaced with new, they will be a continuous source of grief and annoyance until they are replaced, to say nothing of slovenly operation and direct loss from leakage.

And, with all, it is the case where a good packing will fail, sometimes, in new use where it succeeds in seasoned service of a well broken in plant. The same applies to valves and their use. Some of the best materials that money and machinery can produce go into the seats and gates and disks of valves. Under the mature judgment of experienced operative forces, this fact will be respected. A wrench or a stick in the wheel of a new valve may ruin it completely, so far as further service is concerned, requiring resealing or replacement. Sound judgment will tell the operative that, if a new valve fails to hold tight with reasonable closing, something has lodged in the seat. If he cannot dislodge the offender by reasonable manipulation of the valve, he will shut down that portion of operation, go into the valve and clear it of the obstruction.

Scoring Metal Surface

There cannot be much better material for scoring a metal surface than a piece of steel surface scale. The damage may be permanently done to a good valve with the first hard jam of the wheel, even by hand alone. The time for consideration of the foregoing suggestions is that of the preliminary trials of all the plant equipment.

Where shafting and belted transmission of auxiliary power is employed, operating forces will give especial and painstaking attention to this section. In spite of the best intention on the part of the designer of plant layout, they are called upon, sometimes, to overcome or worry indefinitely with erroneous arrangement. Belts, especially, may be sources of annoyance. They cannot be strung vertically, especially if the reaches are lengthy, and expected to give good results in operation. The more nearly they approach such defective arrangement, the more difficult will be their initial service training and the more care required in cutting and adjusting to proper tension and their proper surfacing for the best efficiency to be obtained. Extreme care is required in the tensioning while the belt is taking its stretch set. A little dope on the surface is not to be prohibited. Too much, however, is worse than none. Thin, flexible belts are to be favored to the limit of service they can deliver, and leather, always above all other materials where protected from water and outdoor weather.

Care of Belts

How many plant men responsible for belts know that the flesh side of a leather belt should never be laid to the pulley face?

And the true cutting of belt ends at right angles with the belt run, and the flexibility of laced belt joints are not secondary in importance to the material and arrangement of the belt, for, no matter how excellent the latter, the job as a whole will be a failure unless the former conditions are also excellently met. Every belt in position and ready to run should be rigidly inspected by the superintendent or chief engineer, for tension, for true alignment and, after trial run, for surface condition.

It is needless to remind operative forces that shafting must be in perfect alignment and turn over at required speed without vibration or shock. But they cannot be too vigilant in attention to all shaft bearings and all bearings of minor details of auxiliary equipment, such as pumps, generators, small compressors. The life performance of this equipment is too much dependent on the early running-in period of operation. The adjustment of bearing caps to neat and perfect running contact with their shafts is as much a work of art as is the successful application of packing to running or reciprocating shafts and rods. No line of effort is more commendable than that which brings successfully into use newly set machinery. It is a prideful job, and notwithstanding the days and hours of trial performance of new equipment will be strenuous and exacting, there is pleasure and ample repayment in store for the work well done.

ROCKY MOUNTAIN AREA

(Continued from Page 58)

at 1,040 feet and the Cedar Mesa wildcat is on the beam at 200 feet.

The Empire Petroleum Co. is moving in a rig to the Moab district and will drill a test on the Moab anticline at a point near the town of Moab. The Utah Oil & Development Co. has a well at 1,050 feet on this structure and pay is hoped for around 3,200 feet.

The Utah Petroleum Corp. has made a location for a wildcat on the Gibson Dome at the head of Indian Creek. This company will build a road to the location by way of the Lockhart Canyon and the road will be about 12 miles long.

The test on the big Elk Hills structure by the Midwest Refining Co. and the Utah Southern Oil Co. was spudded in the past week in Section 30-40-19, starting with a 15½-inch hole.

Runs From the Fields

Salt Creek	45,920
Teapot	270
Big Muddy	8,300
Grass Creek	8,120
Elk Basin	790
Greybull	20
Rock River	2,610
Notches	130
Rex Lake	260
Lance Creek	1,030
LaBarge	160
Poison Spider	730
Osage	340
Hamilton Dome	1,190
Lander	390
Byron	70
Pilot Butte	50
Lost Soldier	5,070
Ferris	80
Simpson Ridge	130
Cat Creek	2,630
Lake Basin	200
Sunburst	18,000
Florence	500
Moffat	3,095
Tow Creek	620
Fort Collins	3,340
Boulder	25
Rangeley	100
Hogback	750
Rattlesnake	1,455
Artesia	3,000
Total	99,375

Field Runs for September

Salt Creek	1,367,690
Teapot	34,510
Big Muddy	99,020
Grass Creek	93,450
Elk Basin	25,240
Greybull	600
Rock River	77,300
Notches	6,950
Rex Lake	6,800
Lance Creek	34,480
LaBarge	6,200
Poison Spider	24,000
Osage	10,100
Hamilton Dome	34,480
Lander	11,130
Byron	1,200
Pilot Butte	1,200
Lost Soldier	159,240
Ferris	2,400
Simpson Ridge	3,860
Cat Creek	81,260
Sunburst	659,000
Lake Basin	6,230
Florence	15,000
Moffat	99,991
Fort Collins	109,6 5
Boulder	755
Tow Creek	22,5"5
Rangeley	3,000
Rattlesnake	31,417
Hogback	20,820
Artesia	90,000
Miscellaneous	1,500
Total	3,141,123

MONTANA NEEDS LOWER FREIGHT RATES

(Continued from Page 38)

tana any surplus gasoline without paying a tax.

Freight Rates

The Canadian Pacific Railway has established a rate of 37½ cents on fuel oil to Minneapolis, meeting the Great Northern rate from Montana points, so that the Canadian plants located just across the border from Montana have a favorable outlet for their heavy end products. With a higher market on gasoline in Canada, this arrangement as to plant location has several advantages.

The intrastate rates in Montana resemble the interstate rate structure of the Mid-Continent refiners to consuming centers located in the Middle West and East. There are points in Montana where the freight rates are as high as 95 cents from Montana refineries. In relatively short hauls, rates of from 25 to 50 cents are the rule. The railroads to date have failed to recognize the importance of reasonable rates in petroleum shipments both in and out of the State, and in the opinion of the refiners it is the most important obstacle in the development of the State's oil resources. It is obvious that with this rate situation it is impossible for refineries to secure the maximum return from their plant operations, a situation which is also reflected in low crude prices.

Interstate Rates

Outside of the State, the refineries are shut off to the south by the Wyoming refineries. Considerable gasoline has been shipped into Canada despite the import tax. The logical outlet for surplus products is to the west and to the east.

The railroads have made some concessions in regard to shipments to Minneapolis and St. Paul, the principal marketing center to the east, and to Spokane and other eastern Washington points to the west. However, they are still not on an equality with Mid-Continent and Wyoming refineries to Minnesota points in the shipment of gasoline and kerosene. On the west they are hemmed in by the combination water and rail rate from California refineries.

The fuel oil situation was recently aided when the Great Northern Railway established a 37½-cent rate on what was termed "residual fuel oil" to Minneapolis and St. Paul. The rate had previously been 64 cents, the same as the crude oil rate, which has not been changed. The term "residual fuel oil" is a term peculiar in rate designation to the Great Northern. It has been construed to cover not only the topped crude, but also gas oil and all products other than finished gasoline and kerosene. A 39½-cent rate is also in effect to Duluth.

To the west a 36¼-cent gasoline rate is now in effect to Hillyard (near Spokane), Wash., and a 41½-cent rate on petroleum distillates. The latter covers the tops obtained from refining in the Sunburst field. At present there is one refinery at Hillyard, known as the Spokane Oil & Refining Co., which buys the tops from refineries located in the field. Finished gasoline and kerosene are obtained from these tops at the Spokane plant.

Aid to Refiners

These interstate rates to the east and west, while still high in comparison to rates in other sections, unquestionably have been of great aid to both refiners and producers in Montana. The disposal of fuel oil and other heavy end products has always been a serious problem in Montana. Coal is relatively cheap in the mountain regions and refiners have had difficulty in developing a fuel oil market.

The lower freight rates, coupled with the fact that the Great Northern Railroad has become a large user of fuel oil, has changed this situation. The industries in Montana are also using more fuel oil, one plant at Great Falls having a particularly favorable outlet for its fuel oil with a smelting company.

The Great Northern has been buying fuel oil from several plants. During the over-production period, fuel oil was sold under $1 per barrel. The open market price in the Sunburst area is now around $1.25 per barrel. Recently the Great Northern closed a contract with the International Refining Co. (now owned by the California Petroleum Corp.) for 14,000,000 bbls. of fuel oil over a period of four years. This contract is said to start at a price of $1.25 per barrel with a sliding scale dependent on the price of crude.

The International refinery at Sunburst, in carrying out this contract, is topping around 15,000 bbls. of crude daily in order to secure approximately 10,000 bbls. of fuel oil. One report here is to the effect that part of this fuel oil will be furnished the Great Northern from the California refineries of the California Petroleum Corp.

Locating at Minneapolis

It is known that two or three of the refinery organizations which have kept in touch with the Montana field have had under consideration the location of skimming plants or cracking plants at Minneapolis. This arrangement would give a much better outlet for all refined products than when the plants are located in Montana. It is apparent, however, that there would have to be come downward rate adjustments in both crude and charging stock for cracking plants before this arrangement is possible. Should a large surplus production again develop in the field, it is probable these companies will endeavor to secure the necessary rate concession to carry out their plans.

SOME SOURCES OF OUR INCREASED PRODUCTION

(Continued from Page 37)

On August 5 the Independent Oil & Gas Co. and Garland, in the southwest of the northeast of Section 25-9-6, went deeper than the Hunton and found the Wilcox sand and an initial production of 5,600 bbls., which increased later to 8,000 bbls. This well on October 1 produced 7,700 bbls. The Wilcox sand lies about 100 feet deeper than the Hunton lime in the Seminole Field. A large number of wells were started as a result of the early successes and from the present crop of drilling wells the 100,000-bbl. production is expected in the course of six weeks.

The two Braman pools looked as if they had passed into the history when the Comar Oil Co. changed the situation in North Braman with a Wilcox sand well, completed in June around 3,400 feet, which started at 2,500 bbls. a day. Previously the production had been coming from the Stalnaker sand. The Wilcox sand discovery was in the SW NW Section 21-29-1w. It was followed by other wells that made as high as 6,000 bbls. initial production. This field on October 16 had increased to 31,757 bbls., by reason of a 13,000 bbl. initial producer.

Like Braman, Wewoka was declining steadily. Early in the year the Magnolia Petroleum Co., drilling on the Skinner farm, C NW NW NW, Section 5-11-8, found Wilcox sand around 4,100 feet and the well started off as a gusher which increased with deeper drilling until it was producing 6,000 bbls. a day. This Wilcox Pool proved very rich, but of limited area.

In Payne County, the Olean Petroleum Co. opened up Wilcox sand in the NW SW Section 24-19-4 around 3,700 feet in the old Ingalls Pool. The discovery was made in No. 1 Pleasants, which started at 1,100 bbls. Increased production in the March Pool in Township 18-5 and in the Deep Rock Pool in Township 18-3 helped to swell the county's production above that of October 1, 1925.

Sumner County's Good Pools

Kansas' contribution to the general production increase comes from Sumner and Greenwood Counties. Sumner, after years of wildcatting, came into prominence in the middle of June this year when the Roxana Petroleum Corp. in the NE cor. SW Section 17-32-2e completed a 700-bbl well in the Silicious lime, which lies below 3,650 feet in that district. In July the same company in another township got a 600 bbl. well in the Stalnaker sand at about 1,800 feet in a test in the NE cor. SW Section 25-31-2e. Both these tests were followed immediately by development work which brought the production of the county up to 6,000 bbls. a day by the end of September.

The increase in Greenwood has been in scattered places. That territory, which is made up of two shoestring fields, each containing a number of pools, and in addition some scattered pools, has been slowly but steadily climbing to its present important place ever since 1918.

Sunburst's Increase

The Sunburst Field in Toole County, Montana, is credited with 20,000 bbls. a day on September 30. This is only a part of what the field could produce, its output for some time past having been limited to the quantity of oil the purchasers can take. Twenty-five thousand barrels a day seems to have been the limit of the capacity of the pipelines and this output had been maintained week after week. In September the pipeline runs dropped to 20,000 bbls. toward the close of the month. The increased production in this field was the result of extensions opened last year and developed this year.

Panhandle Oil in Storage

The latest report on pipeline runs, deliveries and stocks for the Panhandle Field in Texas was that of August which showed average daily runs of 95,000 bbls. and average shipments of 55,400 bbls., and stocks at the close of August of 3,488,459 bbls. The difference between the runs from wells and the deliveries to refiners would indicate that of the total month's production of the field about 1,283,000 bbls. remained in the Panhandle Field and was added to stocks. By the close of September, with the greatly increased production and not greatly increased shipments, it may be assumed that another million and a half barrels had been added to Panhandle stocks, bringing the total up to nearly 5,000,000 bbls. Had the Panhandle fields the same pipeline facilities enjoyed by all the other big fields discovered in the past five years it might have caused a general slump in the crude market. The objectionable qualities of the oil in wax, sulphur and salt, and the remoteness of the fields from refineries and pipelines made it less perilous to the industry in general, but it will make itself felt next year with pipeline outlet added to its present-day railroad shipping facilities. The amount of Panhandle oil being run to storage in the territory and unavailable to the refiner on October 1 represents a quantity equal to about two-thirds of the total production increase in the United States, so that as a matter of fact the available production on October 1 this year was little more than it was on the same date a year ago.

CALIFORNIA GASOLINE SITUATION STILL WEAK

LOS ANGELES, Calif., Oct. 14.—During the past week there were no further price reductions in gasoline announced by any of the major oil companies, all apparently selling on the same basis. In spite of the radical drop of 4 cents in retail price, so-called bootleg gasoline in Los Angeles territory is selling even lower. The most prevalent price for this cut-rate material is around 15 cents, many stations advertising 6 gallons for 90 cents. Gasoline, however, which passes city specifications is also offered for sale at 7 gallons for $1, and in one known case as low as 6 gallons for 85 cents, which is slightly over 14 cents a gallon. How prices such as these can long remain in effect and allow dealers to make any profit is hard to understand.

It is believed that in the case of these real cheap gasolines, the price is brought down that low by the independent service station dealer reducing his differential. This is a fact in the case of Flight gasoline, which the Standard Oil Co. is selling at its service stations at 16½ cents a gallon and which can be bought at independent service stations at prices ranging from 15 cents a gallon to as low as 7 gallons for $1, in some cases. In the face of such tactics, by the independent service station operators, the Independent Service Station Association continues to carry on its fight against the present 3-cent differential offered by the large companies.

WEST TEXAS PETROLEUM CLUB

BEST, Tex., Oct. 16.—The following were elected to the board of governors of the West Texas Petroleum Club at its first meeting: Levi Smith, Big Lake Oil Co.; H. O'Bannon, San Angelo National Bank; H. H. Lee, Republic Production Co.; M. O. Boring, Gulf Production Co.; N. E. Tanner, Humble Oil & Refining Co.; Kenneth Hancock, Dixie Oil Co.; John Hoffer, supervisor oil and gas division, Texas Railroad Commission; R. P. Ricker, Ricker & Dodson; J. A. Bermingham, Simms Oil Co.; W. C. Ray, Prairie Oil & Gas Co., and W. H. Winn, Marland Oil Co. San Angelo business men within two hours recently subscribed a fund exceeding $4,000 for equipping the club. The Big Lake company contributed $500. The membership now is between 150 and 200.

REFINING AND MARKETING

PLANS FOR N. P. M. A. CONVENTION AT ATLANTIC CITY ANNOUNCED

By J. B. Waldo

CHICAGO, Oct. 18.—The fifth annual convention and election of officers of the National Petroleum Marketers Association is to be held at Atlantic City, N. J., on October 26, 27 and 28.

Arrangements have been under way for several months so that preparations are well advanced and will be completed before the opening of what is expected to be the most important gathering of independent oil men ever held.

This is the first convention of this organization held in the East and it has been many years since there has been a gathering of independent oil distributors in the territory east of the Alleghany Mountains. The National Petroleum Marketers has a large membership in the East and South, only a small part of which has been able to attend any of the meetings of the organization.

An Educational Convention

The plan of the convention is to be the same which has proved successful in previous meetings of the organization. There will not be a series of set speeches but a discussion of live oil topics. In some instances there will be addresses on a subject, as on "Antiknock Gasoline," by Dr. G. G. Brown, of the University of Michigan, who is an authority of more than national reputation on internal combustion engines. He is scheduled to deliver a lecture on the antiknock properties of gasoline and the advantages of natural gasoline as a blending agent.

The following is a list of some of the subjects that will be brought up for discussion:

Is big business a sound economic factor?

What can we gain from uniform price laws and unfair competition legislation?

Shall we work out some model laws governing unfair competition and try to have them passed in our various states, or handle it as a national problem requiring national legislation?

Can the independent branch of the industry agree on a national policy?—If not, why not?

Need for uncontrolled crude oil supply and real "common carriers."

Cost—what is it? Who knows?

Antiknock gasoline—Ethyl gas—future supply and possibilities.

Anti-trust laws and other business demoralizers vs. real common sense.

Have we and the public the right to demand and f o r c e open and aboveboard bookkeeping?

Need for uniform gas tax laws.

Does gas tax retard sales?

What is the truth about crude oil supply?

What future is there for the independent?

Merchandising vs. price cutting.

What is a fair profit?

L. V. Nicholas, president of the association, goes on record that there will be a full and free discussion so far as he is able to bring it about on each of these subjects; that any problem at present confronting the industry may be brought up and will receive full and frank open forum discussion.

A special feature in connection with the subject of "Antiknock Gasoline" will be that Professor Brown will be in charge of tests to be made of antiknock gasolines to determine the antiknock qualities of each. All visiting members and other oil men who are not members are invited to bring one-gallon samples of any gasoline they want tested for its antiknock values. The tests will be run by experts in charge of a high compression engine and a dynamometer under the direction of Doctor Brown, who is conducting these tests under the auspices of the Association of Natural Gasoline Manufacturers.

The Traymore Hotel has been designated as the official hotel headquarters. The office of the convention where all business will be transacted will be at the headquarters on the Steel Pier.

In announcing the convention President Nicholas stated that the proposal for the formation of a petroleum exchange would be renewed. The proposal is for the "formation of an open crude market, similar to the stock exchange or wheat pit where pipe line crude balances and all other petroleum products can be bought and sold openly."

The convention is practically a joint convention of the members of the National Petroleum Marketers Association and of its associated organization, the Independent Oil Men of America. The latter is the active advertising organization, which, under the management of Raymond Shaw, has been conducting the coast-to-coast publicity campaign for the independent oil men.

Southwest Refiners Present Their Side In Rail Rate Case

A general investigation of freight rates on petroleum products east of the Mississippi River is under way in a hearing being held before John B. Keeler, examiner for the Interstate Commerce Commission, at the Mayo Hotel, Tulsa. The hearing opened October 15 and will continue several days longer. It is the second of a series of hearings, the first of which was held in St. Louis the first week in October.

The chief interest in the Tulsa hearing is in the complaint of the Mid-Continent Refiners' Traffic Association, which is attacking rates between points in the Southwest to the territory east of the Indiana Illinois state line and north of the Ohio and Potomac Rivers, and between points in the Southwest to the southeastern states.

However, because of the great number of cases which have been filed with the Interstate Commerce Commission over rates to points east of the Mississippi, all have been grouped in this general investigation known as "I. C. C. Docket 18458 and Consolidated Cases," and testimony is being taken and witnesses cross-examined not only in the Mid-Continent Refiners' Traffic Association case

(Continued on Page 155)

SEVERAL NEW ANGLES DEVELOP IN TRIAL OF PATENT CLUB CASE

By L. M. Fanning

New York Bureau, The Oil and Gas Journal, Room 543, 30 Church St., New York City

NEW YORK, Oct. 19.—High lights of the first 10 days of the presentation of the defense in the case of the Standard Oil Co. of Indiana and 46 other oil companies accused with it by the government of maintaining an illegal "pool" of oil cracking process patents, before Special Master Charles Martindale in New York, consisted of the bringing out of a decided conflict between the antitrust laws and the Federal laws governing patents of interesting bearing on the case and of the unexpected announcement on the part of the defense that it made no difference whether the government proves the affidavits filed for the Adams cracking process, owned by The Texas Company, should be held false.

Special Master Martindale brought the former issue to the forefront of the discussion when he declared there is a conflict between the two Federal laws "which must be recognized." Alexander B. Royce, assistant United State attorney general in charge of the prosecution, agreed with the special master as to the conflict and added: "We think this conflict will be reconciled in this case."

As expressed by Mr. Martindale, the conflict is that the patent law prescribes that the owner of a patent can form a monopoly of his product by having for 17 years the right to make, use, sell and restrict the selling of that product. The antitrust law, on the other hand, enacted after the patent law, is decidedly against monopolies. Under the patent law, the special master said, assuming a patent is valid, he could not see why the owner of that patent could not sell, license or restrict the territory of his product, as in the case of the Indiana company. He stated this, he said, not to indicate in any way his decision in the present case, but to "try to get down to the primary rights the government gives an inventor."

Mr. Royce agreed with Mr. Martindale with this qualification: "But that would be true only if you pigeonhole the Indiana case, and provided the patents were valid. We maintain they are not valid, and besides, it is because the Indiana company combined with the other companies in creating the trade monopoly that we are prosecuting." Mr. Royce contended that assuming the patents were valid, it would be a case of the company "using a legal thing for an illegal purpose."

Further discussion of the matter was postponed by the special master.

Adams Patents

The point about the Adams affidavits was made by Russell Wiles, counsel for the Indiana company. While claiming the affidavits were true, he told the court that the inventor, Joseph H. Adams, filed claims with the United States patent office covering other features of the apparatus exclusive of those claimed in the

(Continued on Page 155)

NEBRASKA MAY PERMIT BENZO AND ETHYL SALE

LINCOLN, Neb., Oct. 18.—That steps may be taken in the near future to have the Nebraska laws revised to permit the sale of benzo-gasoline and ethyl gasoline is the opinion of leading oil men in the state.

In a recent decision of the Nebraska food, drug and oil bureau, benzo gasoline and ethyl gasoline were declared unsalable under the present law requiring that gasoline for sale must be water white and clear and free from water and all impurities.

The ruling against benzol gasoline was on the ground that this product constituted an adulterated gasoline. Ethyl gasoline was banned because of color requirements.

GASOLINE CONSUMPTION GAINED 15.9 PER CENT

Gasoline consumption in 33 states, as indicated by reports made by wholesalers and dealers in various states, under provisions of the gasoline tax laws or gasoline inspection laws, totaled for the eight months ending with August, 1926, 2,678,385,000 gallons, compared with 2,310,587,000 gallons for the corresponding period of 1925, an increase of 367,798,000 gallons or 15.9 per cent. Gasoline consumption in the 33 states for the month of August, 1926, totaled 414,488,000 gallons compared with 363,120,000 gallons in August, 1925, an increase of 51,368,000 gallons or 14.1 per cent.

August, 1926, daily average consumption of 13,371,000 gallons, compared with a daily average of 13,119,000 gallons in July, 1926, indicates an increase of 1.9 per cent. All available figures for the states of Iowa, Michigan, Nebraska, Ohio, Rhode Island, and Wisconsin are also shown. The figures giving the quantity of gasoline sold or offered for sale as reported under various laws follow: In some cases they are gross figures before deductions allowed for small quantities of gasoline reshipped or sold for other than taxable use, the tax upon which, if paid, is subsequently refunded. All figures are subject to revision.

Consumption by States, August 1926

	Month of Aug., 1926 (Gallons)	Month of Aug., 1925 (Gallons)
Alabama	11,960,000	10,131,000
Arizona	2,774,000	2,429,000
Arkansas	8,373,000	8,948,000
Colorado	12,612,000	9,512,000
Delaware	2,144,000	1,828,000
District of Columbia	4,571,000	4,124,000
Florida	21,173,000	17,566,000
Georgia	16,130,000	12,655,000
Idaho	4,764,000	4,119,000
Kansas	25,968,000	21,053,000
Kentucky	9,937,000	10,984,000
Louisiana	12,067,000	10,145,000
Maine	9,843,000	8,352,000
Maryland	11,258,000	10,893,000
Minnesota	29,521,000	26,248,000
Mississippi	10,127,000	8,290,000
Missouri	30,014,000	30,220,000
Nevada	1,191,000	985,000
New Hampshire	5,791,000	4,924,000
New Mexico	2,571,000	2,384,000
North Carolina	17,217,000	12,984,000
North Dakota	9,743,000	8,765,000
Oklahoma	20,972,000	17,051,000
Oregon	12,445,000	11,130,000
South Dakota	8,498,000	9,211,000
South Carolina	8,282,000	7,902,000
Texas	50,658,000	42,299,000
Utah	3,958,000	2,490,000
Vermont	4,086,000	3,657,000
Virginia	14,268,000	13,130,000
Washington	18,992,000	17,740,000
West Virginia	9,090,000	8,945,000
Wyoming	2,890,000	2,415,000
Total	414,488,000	363,120,000
Daily average	13,371,000	11,714,000
Increase over previous year: Amount	51,368,000	.....
Percentage	14.1%	.....
Iowa	27,439,000	26,570,000
Michigan	58,685,000	51,272,000
Nebraska	16,114,000	14,383,000
Ohio	65,605,000	61,748,000
Rhode Island	5,392,000	4,966,000
Wisconsin	31,970,000	28,403,000

CLIFFORD CHICAGO MANAGER

Following recent changes in the sales division of the Standard Oil Co. of Indiana, Thomas B. Clifford has assumed his new duties as Chicago manager. The new position is one of the many advancements since he became connected with the company 12 years ago. Ross C. Smith is the new assistant manager.

CONSTANTINOPLE WAREHOUSE

WASHINGTON, D. C., Oct. 19.—It is reported the Soviet Naphtha Syndicate has applied to the prefecture in Constantinople for authority to construct on the Bosphorous, bonded warehouses with a capacity of 14,000 tons. The syndicate proposes to turn over installations to the city free of charge after 20 years, the prefecture submitting counter proposals by which the administration of the warehouses should be undertaken by the prefecture.

JENKINS CRACKING PROCESS

PRODUCES QUALITY GASOLINE

Facts from performance

AUTOMATIC CRACKING

Cracking is based on two factors — temperature and time.

No matter what time is required to crack an oil it is automatically provided in the Jenkins Process. The oil under treatment is held at a constant temperature and as the gasoline forms, the vapors immediately leave the heated zone, preventing any deterioration.

GRAVER *Founded 1857 Corporation*

EAST CHICAGO, INDIANA

NEW YORK Grand Cent. Term. | CHICAGO Steger Building | TULSA Atlas Life Bldg. | HOUSTON West Building

Brief Items for Plant Operators

French Experiment With Substitutes For Motor Gasoline

The Automobile Club of France recently completed a 1,500-mile demonstration test to determine the feasibility of using fuels other than gasoline for automobiles, trucks and other motor vehicles. The French automobile owners are hoping to develop a fuel to be manufactured in France and thus do away with the necessity of buying gasoline from foreign countries.

Twenty automobiles of all types including taxicabs and heavy trucks were operated for 13 days without the use of any gasoline. Producer gas plants were in a majority, those comprising two Berliet light trucks with the Berliet-Imbert plant consuming wood blocks; two Renault 3 ton trucks with the Renault charcoal gas plant; one Panhard 3½-ton truck with the Panhard gas plant consuming wood; a similar Panhard using compressed charcoal designated Carbonite; a 2 ton De Dion Bouton truck with the Rex generator and compressed charcoal as fuel and a Peugot on charcoal gas.

A Ford passenger car ran the full distance on acetylene; a couple of Citroens operated on compressed acetylene gas; two small Peugeot cars used a liquid substitute fuel just produced under the title Ketol; a military truck and a military staff car ran on a mixture of benzole and alcohol. As an indication of the possibilities of wood or charcoal fuels, a normal 2-ton De Dion Bouton truck, with special pistons to increase the compression ratio to 6, used compressed charcoal and maintained an average of 29 miles an hour, showed a maximum speed of 40 miles an hour and burned on an average 55 pounds of compressed charcoal per 100 kilometers (62 miles). The truck weighed 10 360 pounds in running order.

While liquid substitute fuels offer the greatest attraction for passenger car use the greatest advance has been made with wood and charcoal gas producer plants. The Berliet company, which has adopted the Imbert wood consuming plant and is using it for all types of commercial vehicles from 1½-ton light truck upwards, is unable at present to keep pace with demand.

NEW BORGER REFINERY BEGINS OPERATIONS

AMARILLO, Tex., Oct. 19.—Operation of the Amarillo Producers & Refiners Corp.'s new refinery at Borger, in the Panhandle oil field, was started the past week. It is a 2,500-bbl. skimming plant at the Isom terminus of the new Santa Fe railroad extension. Starting up of this plant makes two operating plants in the Panhandle. The Amarillo Refining Co., at Amarillo, the other plant, is a pioneer in the field and is running at the rate of between 3,000 and 4,000 bbls. of crude daily.

The Borger refinery was built with part of the equipment of a plant at Panhandle formerly known as the Big Four Refining Co. The Amarillo Producers & Refiners Corp. obtained possession of the plant, dismantled it and moved part of the equipment to Borger. The new plant has both pipe and shell stills and baffle towers.

J. D. Wrather is president and general manager of the company, whose offices are at Amarillo. Sales of the company are handled by the Altitude Petroleum Co. of Tulsa.

WASTE STEAM HEATS PLANT BOILER WATER

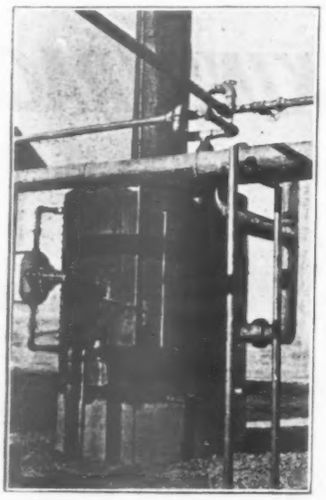
The Standard Engineering Corp. has installed a "homemade" hot well at its new natural gasoline plant located at Casper, Wyo., which incorporates several features interesting to natural gasoline manufacturers and refiners who desire to make an inexpensive installation to use waste steam and hot water in the preparation of boiler feed water.

The plant, which has a capacity of 5,000 gallons daily, extracts gasoline by the oil absorption process from the gas supplied the city of Casper by the New York Oil Co.

The well, which is 6 feet in diameter and 7 feet high, was made from a section of an old tank car no longer suitable for gasoline transportation. Steam is used in distilling the gasoline from the absorbing oil and this steam when condensed is returned to the hot well by pumping. Along with this hot water comes all the steam from the pumps and all other parts of the plant. This steam and water, as shown in the photograph, is discharged near the bottom of the well beneath the water level.

This condensed steam is an excellent boiler feed water and at the same time serves to heat the fresh water needed for the boilers. The float regulator shown in the photograph automatically regulates the flow of cold water into the well. This regulator is set at 160 Fahrenheit the regulator permitting enough water to enter the well to maintain that constant temperature. The pipe connection at the top is the vent for the well. The cold water is sprayed in at the top of the vent.

The installation has proved to be an important saving in steam costs at the plant. It is particularly useful in Wyoming where low temperatures prevail during the winter months.



AMONG THE TECHNICAL MEN

Although one of the youngest operators in the Mid-Continent Field, R. R. Dean, manager of the natural gasoline department of the Manhattan Oil Co., has been connected with that newest branch of the oil industry from its commercial beginnings. While still a boy he worked for his father, W. M. Dean, who was manager of the Ohio operations of the Lewis Emery interests. Some of the first natural gasoline plants in the eastern fields were built at that time.

R. R. Dean

Later he attended Carnegie Institute of Technology, receiving a degree in mechanical engineering. He also attended the University of Pittsburgh for one year, taking postgraduate work. During vacation period he continued his work in the oil fields, gaining a practical experience which proved of great aid after leaving the university.

During the war he served with the aviation corps. Following the war he was employed by several companies in both the Mid-Continent and Wyoming fields. In 1921 he started work as a roustabout for the Waite Phillips company. His advancement with that company was rapid. Following his field experience he was engaged for a time in research work at the company's refinery. Later he aided in the organization of the company's natural gasoline division. He was assistant chief engineer of the company for a time and when a separate department was made of the natural gasoline division he was placed in charge.

He continued in this position for a time after the company's holdings were purchased by the Barnsdall interests. He resigned early this year to engage in engineering work. He built the Manhattan Oil Co.'s first natural gasoline plant in the Greenwood pool of Kansas during the summer and on August 1 took charge of the natural gasoline department of the company.

Jones County Well Producing Crude Of High Gravity

The crude from the Phillips Petroleum Co.'s new well in Jones County, Texas, has a big gasoline content with a gravity of 40-42 according to a distillation test made during the past week. The well is known as the Joe Winters No. 1 and the exact location is NW. Section 19, Block 19, T. & P. Survey, Jones County.

The well, which was the first commercial producer in Jones County, was brought in last month. The well at present is producing 700 bbls. daily. It is expected that the new pool will show considerable production when additional wells are completed. The accompanying distillation test was made by the Phillips Petroleum Co.

Distillation Test

The oil may be classed as high grade, intermediate base crude, very similar to a number of Mid Continent crudes of like gravity. The oil is a dark brown color, flows easily, has a pour test below 20 degrees Fahrenheit, and an appreciably low sulphur content.

General Crude Tests

Color of Crude	Dark Brown
Gravity	40°-42° A.P.I. @ 60°F
Viscosity (Say.) @ 100°F	37 Seconds
Sulphur	0.360%
Conradson Carbon	
Test of Still Residue	8.98%
Initial Boiling Point	75°F

Distillation Summary

	Per Cent	Grav. Vis. (Say.) °A.P.I. @ 100°F	
Total Gasoline and Naphtha Dist.	37.40	59.7	
Kerosene	17.34	41.5	
Gas Oil	9.67	32.0	
Light Lub. Distillate	8.67	27.0	50-100
Med. Lub. Distillate	5.67	24.6	100-200
Still Residuum	20.00		
Distillation Loss	1.25		

POWER ALCOHOL PLANT

WASHINGTON, D. C., Oct. 18.—A joint conference on power alcohol was held recently in London, where a discussion of present and recent experiments with its manufacture was held, according to a report from Horace Lee Washington, consul general, London, made public by the department of commerce.

The first large-scale experiment on these lines is being carried out in Queensland, Australia, where a plant for the production of 2,000,000 gallons of motor fuel a year is being erected, and steps are being taken for the erection of three more, to employ molasses from the sugar plantations and starchy products such as cassava or sweet potato. Experiments elsewhere have used green cellulose, sawdust, sugar and other products.

JENKINS UNIT FOR CASPER

The White Eagle Oil & Refining Co. will start operating a high pressure Jenkins cracking unit at its Casper, Wyo., refinery this month. The unit has been under construction for the past 60 days. It is the first of the Jenkins type to be installed in the Rocky Mountain region. The White Eagle plant has one Holmes-Manley unit in operation.

EAST CHICAGO REFINERY

CHICAGO, Oct. 16.—At East Chicago, where the Roxana Petroleum Corp. is building its new 20,000-bbl. refinery, work is being rushed to completion. At the local office they expect to have products to sell out of the new plant in February. With the completion of the refinery the Chicago offices will be enlarged.

Oil Securities Comparatively Inactive

Standard of Kansas Fell to New Low, But Union of California, Shell Union and Other Issues Advanced

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 543, 30 Church St., New York City

NEW YORK, Oct. 18.—Oil securities were weak but comparatively inactive during the past seven days, although there was rather heavy selling in other groups. Standard of Kansas fell to a new low but Union of California, Shell Union and some other issues showed advances. Traders in oil issues were encouraged by the fact that expected price reductions in crude oil and gasoline have so far failed to materialize.

National Supply

An advance to a new high price of 76 by National Supply Co. was the feature of the oil securities market during the past few days. Persistent accumulation of this stock has been going on for several weeks, largely due to the company's strong financial position and large earnings. Paying $4 per share, the common stock at 76 yields approximately 5.3 per cent; many believe the dividend rate will be raised at the next meeting.

Earnings are estimated at the rate of $12 a share for 1926, and a favorable outlook for 1927 would seem to justify the inauguration of dividends at the rate of $6 a year per share.

Oil Well Supply

Oil Well Supply Co. also has been showing favorable earnings this year, and is in a strong financial position. Paying $2 per share and selling at 35, the common stock yields about 5.7 per cent. Earnings for the first six months of the year were at the rate of $2.11 a share on the common, but it is expected the full year's results will show in the neighborhood of $6 a share earned.

Standard Oil of California

Accumulation of stock of the Standard Oil Co. of California is said to be based on hopes for declaration of an extra dividend on the stock at the next meeting. Standard of California has been fairly liberal in its dividend policy in the past, and it is believed by some followers of the stock that oil conditions on the Pacific Coast are reaching a state of marked improvement, in which the major oil companies will be able to reduce their stocks of crude at attractive prices. Standard of California, through Pacific Oil, has exceptionally large underground oil reserves on the coast and is, in all departments, in the strongest position in the oil trade that it has ever boasted.

Union of California

The Union Oil Co. of California reports for the nine months ended September 30, 1926, net profit of $9,750,000 after interest, depreciation, depletion, Federal taxes, etc., equivalent to $2.57 a share (par $25) earned on $94,553,450 stock. This compares with $8,750,000, or $2.31 a share, in the same period of the previous year.

The net profit for the September quarter was $3,550,000, equal to 93 cents a share, comparing with $3,500,000, or 92 cents a share, in the preceding quarter, and $2,850,000, of 75 cents a share, in the September quarter of 1925.

The income account for the nine months ended September 30, 1926, compares as follows:

	1926	1925
Profit*	$18,850,000	$17,425,000
Depr. and depletion	5,600,000	5,275,000
Cost new drilling, etc.	3,500,000	3,400,000
Net profit	$ 9,750,000	$ 8,750,000

*After Federal taxes, interest, etc.

The company declared the regular quarterly dividend of 50 cents a share, payable November 10 to stockholders of record October 16.

Current assets of the Union Oil Co. of California as of September 30, 1926, were $55,000,000, the same as December 31, 1925, and current liabilities $8,850,000, an increase of $750,000. Capital expenditures totaled $12,300,000, chiefly for field development work, improvements and additions to refineries. The company had oil in storage September 30 totaling 17,800,000 bbls. Production of the Union Oil Co. and controlled companies in the nine months ended September 30 was 11,140,000 bbls., about the same as for the same period of 1925. During the period 32 wells were completed in southern California fields, 10 in Colorado and 1 in Wyoming, with combined initial production of 21,500 bbls. daily.

Independent Oil & Gas

The Independent Oil & Gas Co. reports for the quarter ended September 30, 1926, net income of $864,947, after taxes, interest, depreciation and depletion, equivalent to $1.73 a share earned on 500,000 no par shares of stock. This compared with $518,895, or $1.04 a share, in the preceding quarter, and $506,347, or $1.01 a share, in the third quarter of 1925.

Net income for the first nine months of 1926 totaled $1,794,376, equal to $3.59 a share, against $2,163,913, or $4.32 a share, in the same period of 1925.

Present daily average net production is around 14,000 bbls. daily.

Anglo-Persian Oil

The Anglo-Persian Oil Co. has declared a dividend of 12½ per cent cash on the ordinary shares, the same as declared a year ago, and a stock dividend of 50 per cent. The annual report for the year ended March 31, 1926, recommends capitalizing £4,475,000 out of general reserves to pay the 50 per cent stock dividend on 8,950,000 ordinary shares of £1 par which are outstanding, which will stand at $5,163,128 after transfer of £3,663,128 formerly credited to share premium account and allocation of £1,500,000 from last year's profits.

Lago Oil & Transport

In connection with the special meeting of stockholders of the Pan American Petroleum & Transport Co., called for November 8 to act on an offer to exchange one share of Pan American B stock for three shares of Lago Oil & Transport Co., F. H. Wickett, president of the Pan American company, states the offer is made as a result of the development of Lago's properties.

The Pan American Petroleum & Transport Co. already owns a majority of the stock of the Lago company and he states it is the opinion of the directors it would be advantageous to the Pan American as well as to Lago stockholders to acquire as much of the minority shares as is possible by the exchange. The maximum number of Lago shares which may be tendered for exchange is 1,999,883, so that the largest number of Class B shares of Pan American necessary to complete the exchange is 666,628.

The statement of the Lago Oil & Transport Corp. and its subsidiaries for the six months ended June 30, 1926, shows net profit of $2,237,613 after depreciation, depletion, taxes, etc., equivalent to 56 cents a share earned on 3,968,771 no par value shares of stock.

The consolidated income account for the six months ended June 30, 1926, follows:

Operating profit	$2,932,630
Depreciation and depletion	672,773
Balance	$2,259,857
Other income	160,072
Total income	$2,419,929
Taxes	160,000
Minority interest proport.	32,316
Net profit	$2,237,613

The balance sheet of the Lago Oil & Transport Corp. as of June 30, 1926, follows:

Assets: Oil lands, leases, oil wells, marine equipment, etc., after depreciation and depletion, $62,418,886; organization expenses, $315,885; oil, $110,363; materials and supplies, $1,891,047; accounts receivable, $544,549; cash, $7,572,241; deferred charges, $106,908; total, $72,959,880.

Liabilities: Capital stock and initial surplus (represented by 3,968,771 no par shares), $68,871,856; Lago Petroleum Corp. (62,457 shares of no par value), $956,467; British Zulia Oil Co., Ltd., (represented by 2,250 shares), $43,269; accounts payable, $578,316; provision for Federal taxes, $272,359; earned surplus, $2,237,613; total, $72,959,880.

Net crude oil production of the Lago Oil & Transport Co. in the first eight months of 1926 amounted to 4,121,944 bbls.

Dividends

The Burmah Oil Co., Ltd., has declared an interim dividend of 10 per cent, less tax, on the ordinary stock, which was increased 25 per cent. A year ago an interim dividend of 12½ per cent was declared.

The Louisiana Oil Refining Co. declared a regular quarterly dividend of $1.62½ a share on the 6½ per cent preferred stock, payable November 15, to stockholders of record November 1.

The Prairie Oil & Gas Co. has declared the regular quarterly dividend of 50 cents a share, payable November 30 to stockholders of record October 30.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

Stocks—	Par	Clos. Quot. Oct.18	Clos. Quot. Oct.11	1926 High	1926 Low	1925 High	1925 Low	1924 High	1924 Low
Amerada Corp.	..	28¼	2?	32⅞	21⅝	..	..	..	..
Atlantic Ref., com.	100	100⅝	99½	128⅝	97	117½	95½	140½	78½
Barnsdall "A"	25	25⅝	25⅝	33½	23½	33½	18⅝	29½	19
California Pet., com.	25	30½	30	38¼	30⅝	34⅝	23⅝	29	19⅞
Houston Oil	100	*52¼	52½	72	50¼	85	59	82½	61
Independent Oil & Gas	..	25⅝	24	34	20¼	41⅝	13½	16¼	5⅝
Indian Refining	10	8	9	13⅝	9½	14¼	5⅝	7	3⅝
Lago Oil & Trans.	..	20½	19⅞	24½	19¼	..	..	..	..
Louisiana Oil	10	14½	14⅝	19⅝	12	23⅝	13⅝	..	..
Maracaibo	..	*17½	17⅝	25⅞	18⅝	35½	20⅝	37¼	25⅝
Marland	..	52⅝	52¼	63⅝	49¼	60½	32⅝	42	29
Mexican Seaboard	..	5⅝	8½	13⅝	6	22½	9	26⅝	14⅛
Mid-Continent Pet.	..	29½	29½	41	25⅝	38	25⅝	40¾	22⅝
National Supply	50	73½	71¼	71	55½	71	54⅜	72½	54
Oil Well Supply	25	35½	34¼	36	30	38	33⅜	..	..
Pan. Amer., B	50	62	62½	73⅝	56⅛	83⅜	59½	65	44½
Pan. Amer., Western B	..	31	30½	46	24	49⅝	37¼	..	..
Phillips Pet.	..	47⅞	47¼	52⅝	42½	47¼	36¼	52¼	28½
Producers & Refiners	50	16½	17½	17½	11	32⅝	12½	32¼	29⅝
Pure Oil, com.	..	25⅝	26	31	25⅝	33⅜	25⅜	30¼	20
Royal Dutch, N. Y., sh.	13.40	48½	47⅝	57⅜	49⅜	57⅜	48¼	53½	40⅜
Shell Transport	10	*41⅝	*42	48⅝	42	49	39⅜	42	33
Shell Union, com.	..	28¼	27½	30⅜	24	28⅜	21⅝	22½	15⅝
Simms Pet.	10	18¼	18	28⅝	16½	28½	17⅜	24	10⅝
Sinclair Consolidated, com.	..	18	18¼	24⅞	19⅝	24⅞	17	17½	15
Skelly Oil	25	31¼	32⅜	37¼	27	32½	21⅜	29	17¼
Standard of California	25	60	60⅝	63¼	54	67¼	51½	68⅛	55½
Standard of New Jersey, com.	25	41⅜	42	46⅜	40¼	47½	38⅜	41½	33
Sun Oil Co.	..	32½	32½	41⅜	30¼	43⅞	38¼	..	..
The Texas Company	25	52	52⅜	58	48	55	42⅜	45⅝	37⅜
Texas Pacific Coal & Oil	10	13⅛	13⅝	19½	12⅛	23⅜	11	15¼	8¼
Tide Water Oil	25	*28	28	39¼	30½	..	..	..	..
Transcontinental	..	3⅜	3⅞	5½	3	5⅝	3½	6½	3⅜
Union Oil of California	25	55⅜	52⅝	58⅜	37¼	43⅜	33¼	30	35½
Union Tank, com.	100	116	116	120⅜	84¼	1134	118	132⅞	94
White Eagle Oil & Refining	..	26	26¼	29⅜	25¼	31⅜	25⅝	28⅝	23¼
Standard Oils									
Anglo-American Oil	£1	18⅛	*17	19⅜	16⅛	26⅜	17⅛	18⅜	14⅜
Borne Scrymser	100	*250	*260	295	226	240	205	164	150
Buckeye Pipe Line	50	42	*44	59½	47⅜	72	62½	85¼	51
Chesebrough Mfg. Co.	25	*72	*71	72⅜	63	74	48¼	62½	29¼
Continental	10	18⅜	19¼	25⅞	19¼	31⅛	21⅜	..	..
Crescent Pipe Line	25	15¼	*15¼	16	14½	17½	10	20	11⅜
Cumberland Pipe Line	100	*107½	*107	137	108	156	128	148	108
Eureka Pipe Line	100	45	*43½	63⅜	47⅜	96	61¼	105	74
Galena Signal, com.	100	*11¼	10⅞	32½	9⅜	68½	23½	69⅜	62⅛
Humble Oil & Refining Co.	25	55	55⅜	68¼	52	99	42½	43⅜	26
Illinois Pipe Line	100	*134¼	*134½	141	131	154½	124	161	123
Imperial Oil, Ltd.	..	35	35	38⅜	32½	39¼	27¼	119	99
Indiana Pipe Line	50	*59	59⅜	68	58	84	87½	100	66
International Pet. Co.	10	30⅜	31⅝	35½	28⅜	25⅝	22½	34⅜	16⅞
National Transit Co.	12.50	13	13½	20⅜	14½	25⅛	16½	25⅞	20⅝
New York Transit	100	*31	*30	51½	31	79	50	97	54½
Northern Pipe Line	100	66½	*65	80½	68	88	67½	107½	72
Ohio Oil Co.	25	*57½	57½	67⅜	55⅜	75¼	60	79½	53
Penn.-Mex. Fuel	25	*16⅜	*17	24¼	16	44	19	35⅝	27
Prairie Oil & Gas	25	49¾	49½	60¼	48	65½	45¾	289	193
Prairie Pipe Line	100	124¼	*124	127	122½	129⅝	105	111	100
Solar Refining Co.	100	*195	195	212	184½	259	200	240	170
South Penn Oil	25	35⅛	36⅜	50	35	7197	139	176	117
Southwest Pa. Pipe Line	100	*55	*51	56	47¼	84	50	89	68
Southern Pipe Line	50	*23⅜	*23¼	74½	61½	103	63	100	80½
Standard of Indiana	25	61⅜	62¾	70½	61⅝	70⅜	60½	69⅝	54¼
Standard of Kansas	25	16½	19⅝	36½	16½	46	20½	50½	32½
Standard of Kentucky	25	116¼	117	134⅝	108	137	114⅝	171⅝	101
Standard of Nebraska	25	*43½	43¼	†51¼	42	270	231	262	198
Standard of New York	25	30⅜	30⅜	47¼	30⅝	48⅝	40	48	37⅝
Standard of Ohio, com.	100	291	293	362	292½	369	238	337½	277
Swan & Finch, com.	25	*15¼	*15	21	15	27	12	28	20
Vacuum Oil	25	94⅜	94½	109⅝	94¼	109¼	80¼	83½	50½
Miscellaneous									
Gulf Oil Corp. of Pa.	25	89½	89⅝	95	82½	98¼	63½	67⅝	56
Tidewater Associated	..	21⅝	22¼	27	21	..	..	..	..

*Bid, no sales. ‡Old Stock. †New stock.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

Oct. 18	56.53	Sept. 13	59.06	Aug. 9	59.35
Oct. 11	56.54	Sept. 3	60.16	Aug. 2	59.76
Oct. 4	57.92	Aug. 30	59.86	July 26	58.44
Sept. 27	58.78	Aug. 23	59.06	July 19	59.45
Sept. 20	58.46	Aug. 16	59.34	July 12	59.43

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

	Oct. 19		Oct. 12		Oct. 5	
OKLAHOMA (Group 3)—						
50-52 450 end point (Naphtha)	.09¾		.09¾		.09¾	.10
56-58 450 end point	.09¼	.09¾	.09½	.09¾	.09¾	
58-60 450 end point	.09¾	.09⅞	.09⅞		.09¾	.10
58-60 437 end point (U. S. Motor)	.09¾		.09¾	.10	.10	.10¼
60-62 400 end point	.10½	.10⅝	.10½	.10¾	.10½	.10¾
64-66 375 end point	.10¾	.11	.10¾	.11	.10⅞	.11
68-70 360 end point	.11⅝	.11⅞	.11⅝	.11¾	.11¾	.12
KANSAS—						
58-60 437 end point (U. S. Motor)	.10	.10¼	.10	.10¼	.10½	.10¾
NORTH TEXAS—						
48-50 450 end point (Naphtha)	.09⅝	.09¾	.09⅝	.09¾	.09¾	.10
50-52 450 end point (Naphtha)	.09¾		.09¾		.09¾	.10
56-58 450 end point	.09¼	.09¾	.09½	.09⅝	.09¾	
58-60 437 end point (U. S. Motor)	.09⅝	.09¾	.09⅝	.10	.10	.10⅛
60-62 400 end point	.10¼	.10½	.10¼	.10½	.10⅜	.10½
64-66 390 end point	.10½	.10⅝	.10½	.10⅝	.10½	.10¾
64-66 375 end point	.10⅜	.10¾	.10⅝	.10⅞	.10⅝	.10⅞
68-70 360 end point	.11½	.11¾	.11½	.11¾	.11⅜	
NORTH LOUISIANA—						
58-60 437 end point (U. S. Motor)	.10	.10¼	.10⅛	.10⅜	.10¼	.10⅜
ARKANSAS—						
58-60 437 end point (U. S. Motor)	.10		.10⅛	.10⅜	.10¼	.10⅜
ROCKY MOUNTAIN STATES—						
*58-60 437 end point (U. S. Motor)	.12¾	.13	.12⅞	.13	.13	.13¼
PENNSYLVANIA—						
52 Naphtha	.12	.12¼	.12	.12¼	.12¼	.12½
54 Naphtha	.12	.12¼	.12	.12¼	.12½	.12⅝
56 Gasoline	.12¼	.12½	.12¼	.12½	.12½	.12⅝
58 Gasoline	.12½	.12⅝	.12½	.12⅝	.12⅝	.13
60 Gasoline	.13	.13¼	.13	.13¼	.13¼	.13½
62 Gasoline	.14	.14¼	.14	.14¼	.14	.14¼
64 Gasoline	.14¼	.14½	.14¼	.14½	.14½	.14⅝
66 Gasoline	.15½	.15⅝	.15½	.15⅝	.15½	.15⅝
68-70 Gasoline	.17½	.17¾	.17½	.17¾	.17½	.17¾
CALIFORNIA—						
54-58 437 end point (U. S. Motor) domestic	.10	.10½	.10	.10½	.10	.10½
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 end point (Naphtha)	.09¾		.09¾		.10	
56-58 450 end point	.09½	.09⅝	.09⅝	.09¾	.09⅞	.10
58-60 437 end point (U. S. Motor)	.09¾	.10	.09⅞	.10¼	.10⅛	.10¼
60-62 400 end point	.10½	.10¾	.10½	.10¾	.10¾	.10⅞
64-66 375 end point	.11	.11¼	.11	.11¼	.11⅛	.11⅜
68-70 360 end point	.11¾		.11¾		.11⅞	.12

*Colorado points.

NATURAL GASOLINE

	Oct. 19		Oct. 12		Oct. 5	
OKLAHOMA (Group 3)—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.09		.09¼	.09⅜	.09½	
Grade A, 72-79.9, 375 e.p., rec 90%	.09	.09¼	.09¼	.09⅜	.09½	
Grade BB, 84-92, 375 e.p., rec. 85%	.08½	.08⅝	.08⅞	.09	.09	.09⅛
Grade B, 76 83.9, 375 e.p., rec. 85%	.08½	.08⅝	.08⅞	.09	.09	.09¼
Grade C 80 90, 375 e.p., rec. 78%	.08¾		.08⅝	.08¾	.09	
NORTH TEXAS—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.09	.09¼	.09¼		.09½	
Grade A, 72-79.9, 375 e.p., rec. 90%	.09	.09¼	.09¼		.09½	
Grade BB, 84-92, 375 e.p., rec. 85%	.08½	.08⅝	.08⅞	.09	.09	.09⅛
Grade B, 76 83.9, 375 e.p., rec. 85%	.08½	.08⅝	.08⅞	.09	.09	.09¼
Grade C, 80-90, 375 e.p., rec. 78%	.08¾		.08½	.08¾	.09	
NORTH LOUISIANA—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.09¾	.09½	.09⅞	.10	.10¼	.10⅜
Grade B, 76-83.9, 375 e.p., rec. 85%	.09¼	.09⅜	.09¾	.09⅞	.10⅛	.10¼
Grade C, 80-90, 375 e.p., rec. 78%	.09	.09¼	.09½	.09¾	.10	.10¼
CALIFORNIA—						
75-85, 375-390 end point	.11½	.12	.11½	.12	.11½	.12
CHICAGO DISTRICT (Based on Group 3)—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.09	.09⅛	.09¼	.09½	.09¾	
Grade A, 72-79.9, 375 e.p., rec. 90%	.09	.09⅛	.09¼	.09½	.09¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.08¾	.09	.09	.09¼	.09¼	.09⅜
Grade B, 76 83.9, 375 e.p., rec. 85%	.08¾	.09	.09	.09¼	.09¼	.09⅜
Grade C, 80-90, 375 e.p., rec. 78%	.08½	.08⅝	.08¾	.09	.09	.09¼

MOTOR NATURAL GASOLINE

	Oct. 19		Oct. 12		Oct. 5	
OKLAHOMA (Group 3)—						
60-62 450 end point	.09½		.09½	.09¾	.09¾	.10
64-66 437 end point	.09⅝	.09¾	.09¾		.10	
NORTH TEXAS—						
64-66 437 end point	.09½	.09¾	.09⅝	.09¾	.09¾	.10
PENNSYLVANIA—						
*60-62	.12¼	.12½	.12¼	.12½	.12¼	.12½
*64-66	.12½	.12¾	.12½	.12¾	.12½	.12¾
*66-68	.12¾	.13	.12¾	.13	.12¾	.13
*68-70	.12¾	.13	.12¾	.13	.12¾	.13
CHICAGO DISTRICT (Based on Group 3)—						
60-62 450 end point	.09½	.09¾	.09¾	.10	.10	
64-66 437 end point	.09¾	.10	.10	.10¼	.10¼	

*At Sistersville, W. Va.

BURNING OIL

	Oct. 19		Oct. 12		Oct. 5	
KANSAS—						
41-43 water white Kerosene	.07½	.07¾	.07½	.08	.08	.08½
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.06⅞	.07⅛	.07	.07¼	.07¼	.07½
42-44 water white Kerosene	.07¼	.07⅜	.07⅝	.07¾	.07¾	.08
NORTH LOUISIANA—						
41-43 prime white Kerosene	.07	.07½	.08	.08¼	.08¼	.08½
ROCKY MOUNTAIN STATES—						
*40-41 water white Kerosene	.09⅞	.10	.10	.10¼	.10¼	.10½
NORTH TEXAS—						
41-43 water white Kerosene	.06¾	.07	.06⅞	.07	.07⅛	.07¼
ARKANSAS—						
41-43 water white Kerosene	.08	.08¼	.08	.08¼	.08¼	.08½
PENNSYLVANIA—						
43 Kerosene prime white	.08¾	.09	.09¼	.09½	.09¾	.10
45 Kerosene water white	.09	.09¼	.09½	.09¾	.09¾	.10
46 Kerosene water white	.09¾	.10	.10	.10¼	.10¼	.10½
47 Kerosene water white	.10¼	.10½	.10½	.10¾	.10¾	.11
34 Neutral	.07½	.07¾	.07½	.07¾	.07½	.07¾
34 Sundebloom Neutral	.08½	.08¾	.08½	.08¾	.08½	.08¾
36 Miners' Neutral	.07¾	.07½	.07¼	.07½	.07¼	.07½
300 Mineral Seal	.08½	.08⅝	.08½	.08⅝	.08½	.08⅝
CALIFORNIA—						
38-40 water white (high burning test)	.07½	.08	.07½	.08	.07½	.08
Engine distillate, 43-45 445 end point	.07¾	.08	.07¾	.08	.07¾	.08
Engine distillate, 42-44 480 end point	.07¼	.07½	.07¼	.07½	.07¼	.08½
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.06⅞	.07	.07	.07½	.07¼	.07⅝
42-44 water white Kerosene	.07⅝	.07⅝	.07¾	.08	.07⅝	.08

*Colorado points.

FUEL OILS

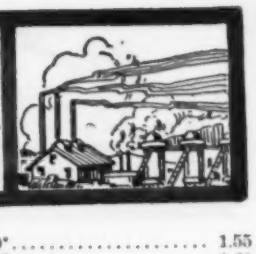
	Oct. 19		Oct. 12		Oct. 5	
KANSAS—						
24-26 Fuel Oil	1.50	1.55	1.50		1.50	
32-36 Gas Oil	.04½	.04⅝	.04⅝	.04¾	.04⅝	.04¾
38-40 Distillate	.05⅞	.06	.05⅞	.06	.05⅞	.06
OKLAHOMA (Group 3)—						
Below 22 Fuel Oil (sellers' cars)	1.25	1.27½	1.25	1.27½	1.25	1.30
22-26 Fuel Oil (sellers' cars)	1.30	1.32½	1.30	1.32½	1.30	1.35
24-26 Fuel Oil (sellers' cars)	1.35	1.37½	1.35	1.40	1.35	1.40
26-30 Fuel Oil (sellers' cars)	1.40	1.45	1.42½	1.45	1.45	1.47½
28-30 Fuel Oil (sellers' cars)	1.52½	1.55	1.50	1.55	1.52½	1.55
32-36 Gas Oil (dark)	.04⅛	.04¼	.04⅛	.04¼	.04⅛	.04⅜
32-36 Gas Oil (cracking stock)	.04¼	.04⅜	.04¼	.04⅜	.04¼	.04⅝
36-38 Distillate	.05⅜	.05½	.05⅜	.05½	.05⅜	.05½
38-40 Straw Distillate	.05⅝	.05⅞	.05⅝	.05⅞	.05⅝	.05⅞
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	1.45	1.50	1.45		1.45	
32-36 Gas Oil (straw)	.04	.04⅛	.04	.04⅛	.04	.04⅛
38-40 Straw Distillate	.05⅜	.05⅝	.05⅜	.05⅝	.05⅜	.05⅝
NORTH LOUISIANA—						
18-20 Fuel Oil	1.22½	1.30	1.27½	1.30	1.27½	1.30
32-36 Gas Oil (straw)	.04⅛	.04⅜	.04⅛	.04⅜	.04⅛	.04⅜
32-36 Gas Oil (dark)	.04	.04¼	.04	.04¼	.04	.04¼
36-38 Distillate	.05	.05¼	.05	.05¼	.05	.05¼
ARKANSAS—						
38-40 Distillate	.05½	.05¾	.05½	.05¾	.05½	.05¾
32-36 Gas Oil (straw)	.04¼		.04¼		.04¼	
16-20 Refinery Fuel Oil	1.22½	1.25	1.25		1.25	
GULF COAST (South Texas)—						
Gas Oil	.05½	.05⅝	.05½	.05⅝	.05½	.05⅝
Fuel Oil	1.75	1.85	1.75	1.85	1.75	1.85
PENNSYLVANIA—						
30-34 Fuel Oil	.06	.06¼	.05¾	.06	.05¾	.06
36-40 Fuel Oil	.06½	.06¾	.06½	.06¾	.06½	.06¾
CALIFORNIA—						
33-36 Distillate	.04	.04¾	.04	.04¾	.04	.04¾
27-32 Distillate	.03½	.04	.03½	.04	.03¾	.04
15-20 Fuel Oil, Bunkers (at tide water)	.92½	1.04	.92½	1.04	.92½	1.04
15-20 Fuel Oil, cargo lots (tide water)	.82½	.87½	.82½	.87½	.82½	.87½
27 plus Diesel	1.15	1.19	1.15	1.19	1.15	1.19
CHICAGO DISTRICT (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars) Group 3	1.35	1.40	1.35	1.40	1.40	1.45
22-26 Fuel Oil (sellers' cars) Group 3	1.30	1.35	1.30	1.35	1.35	1.40
18-22 (Group 3)	1.25	1.30	1.25	1.30	1.27½	1.32½
18-20 (Smackover)	1.25	1.30	1.25	1.30	1.27½	1.30
32-36 Gas Oil	.04¼	.04¼	.04¼	.04¼	.04¼	.04¼
36-38 Distillate	.05½	.05¾	.05⅝	.05⅝	.05¼	.05½
38-40 Straw Distillate	.05¾	.06	.05¾	06	.05¾	.06

LUBRICATING OILS AND WAX

	Oct. 19		Oct. 12		Oct. 5	
OKLAHOMA (Group 3)—						
70-80 vis., 2½ color, 20-25 cold test	.06	.07	.06	.07	.06	.07
100 vis., 2 color, 20-25 cold test	.07	.07½	.07	.07½	.07	.07½
100 vis., 3 color, 20-25 cold test	.06½	.07	.06½	.07	.06½	.07
150 vis., 3 color, 20-25 cold test	.09½	.10	.09½	.10	.09½	.10
150 vis., 4 color, 20-25 cold test	.09¾		.09¾		.09¾	
180 vis., 3 color, 23-28 cold test	.10½	.11½	.10½	.11½	.10½	11½
180 vis., 4 color, 23-28 cold test	.10	.10½	.10	.10½	.10	.10½
200 vis., 3 color, 23-28 cold test	.10¾	.12¼	.10¾	12¼	.10¾	.12¼
200 vis., 4 color, 23-28 cold test	.11¼	.11½	.11¼	.11½	.11¼	.11½
220 vis., 3 color, 25-30 cold test	.13	.13½	.13	.13½	.13	.13½
220 vis., 3 color, 25-30 cold test	.13		.13		.13	
240 vis., 3 color, 25-30 cold test	.14	.15	.14	.15	.14	.15
240 vis., 4 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
280 vis., 3 color, 25-30 cold test	.16	.17	.16	.17	.16	.17
280 vis., 4 color, 25-30 cold test	.15½	.16½	.15½	.16½	.15½	.16½
180 vis., 5 color, 23-28 cold test	.09¾	.10¼	.09¾	.10¼	.09¾	.10¼
200 vis., 5 color, 23-28 cold test	.10	.11¼	.10	.11¼	.10	.11¼
220 vis., 5 color, 25-30 cold test	.12	.12¼	.12	.12¼	.12	.12¼
240 vis., 5 color, 25-30 cold test	.13	.14	.13	.14	.13	.14
280 vis., 5 color, 25-30 cold test	.15	.16	.15	.16	.15	.16
Cylinder Stocks:						
600, steam refined, dark green	.08	.11	.08	.11	.08	.11
600, steam refined, light green	.06	.07	.06	.07	.06	.07
100 200 vis. @ 210 Bright Stock	.33	.35	.33	.35	.33	.35
150-160 vis. @ 210 Bright Stock	.28	.31	.28	.31	.28	.31
Waxes:						
124-126 White Crude Scale Wax	.04¾		.04¾		.04¾	
PENNSYLVANIA—						
150, 3 color	.23		.23		.23	
180, 3 color	.26½		.26½		.26½	
200, 3 color	.28¾		.28¾		.28½	
220, 3 color	.31		.31		.31	
600, steam refined	.11½		.12¼		.12¼	
635, steam refined	.15		.15½		.15½	
650, steam refined	.16¼		.16¾		.17	
600, Pennsylvania flash	.21		.21		.21	

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields



630, Pennsylvania flash	.32½		.32½		.32½	
*550, E filtered	.19		.19		.19	
600, E filtered	.21½		.21½		.21½	
*600, E filtered	.21½		.21½		.21½	
600, D filtered	.27		.27		.27	
550, E filtered	.18		.18		.18	
550, D filtered	.22		.22		.22	
Pennsylvania Bright Stock	.41		.41½		.41½	
122-124 White Crude Scale Wax	.05	.05⅛	.05⅛	.05¼	.05⅛	.05¼
†124-126 White Crude Scale Wax	.05⅛	.05¼	.05¼	.05½	.05¼	.05½

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
Zero Black	.06	.07	.06	.07	.06	.07
No. 2 color, 100 vis., pale oil	.08½	.09	.08½	.09	.08½	.09
No. 3 color, 200 vis., pale oil	.11	.12	.11	.12	.11	.12
No. 3½ color, 300 vis., pale oil	.12	.13	.12	.13	.12	.13
No. 3¾ color, 500 vis., pale oil	.14	.15	.14	.15	.14	.15
No. 4 color, 750 vis., pale oil	.17	.18	.17	.18	.17	.18
No. 2 plus color, 200 vis., pale filtered	.21½		.21½		.21½	
No. 2 color, 300 vis., pale filtered	.24½		.24½		.24½	
No. 2½ color, 500 vis., pale filtered	.27½		.27½		.27½	
No. 2½ color, 750 vis., pale filtered	.35½		.35½		.35½	
No. 5 to 6 color, 200 vis., red oil	.10	.10½	.10	.10½	.10	.10½
No. 5 to 6 color, 300 vis., red oil	.11½	.12	.11½	.12	.11½	.12
No. 5 to 6 color, 500 vis., red oil	.12½	.13	.12½	.13	.12½	.13
No. 5 to 6 color, 750 vis., red oil	.16	.17	.16	.17	.16	.17
CALIFORNIA—						
130 vis., 2½-3 color	.10	.11½	.10	.11½	.10	.11½
200 vis., 2½-3 color	.13½	.14½	.13½	.14½	.13½	.14½
300 vis., 3 -3½ color	.15	.16	.15	.16	.15	.16
350 vis., 3½-4 color	.15½	.17½	.15½	.17½	.15½	.17½
400 vis., 3½-4 color	.18	.19	.18	.19	.18	.19
Red Neutrals:						
200 vis., 3½-5 color	.12	.13	.12	.13	.12	.13
300 vis., 5 -6 color	.13	.14	.13	.14	.13	.14
400 vis., 5 -6 color	.15	.16	.15	.16	.15	.16
500 vis., 4½-5 color	.18	.19½	.18	.19½	.18	.19
500 vis., 6 -6½ color	.16	.17	.16	.17	.16	.17
600 vis., 6½ plus color	.17	.18½	.17	.18½	.17	.18

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Oct. 19	Oct. 12	Oct. 5
Gasoline:			
U. S. Motor, 58-60 437	.13	.13	.13
Export, 64-66 375	.14	.14	.14½
Kerosene, prime white, 41-43	.10½	.10½	.10½
*Bunker Oil "C" 14-16, per bbl.	1.65	1.65	1 65
*Diesel Oil, 28-30, per bbl.	2.50	2.50	2.50
Gas Oil, 28 plus	.06¾	.06¾	.06¾
Furnace Oil (tankwagon)	.11	.12	.12
Cylinder Oil, light filtered, 600 s.r.	.29	.29	.29
Bright Stock, No. 5, 150 vis., at 212 F.	.42	.42	.42
White Neutral, No. 1, 170 vis., 1 color	.37	.37	.37
Spindle Oil, No. 1 red, 230 vis., 5½ color	.17½	.17½	.17½
Pale Oil, "25," 170 vis., 3½ color	.13	.13	.13
Pale Oil, "28," 100 vis., 2 color	.08	.08	.08
Red Oil:			
No. 3, 160 vis., 7 color	.11	.11	.11
No. 2, 212 vis., 5½ color	.12	.12	.12
No. 1, 265 vis., 5½ color	.13½	.13½	.13½
Polar, 295 vis., 6 color	.14	.14	.14
Paraffin Wax, refined:			
120-122 a.m.p., per lb.	.05¾	.05¾	.05⅞
125-127 a.m.p., per lb.	.05⅞	.06	.06
130-132 a.m.p., per lb.	.06⅜	.06½	.06½
135-137 a.m.p., per lb.	.06⅝	.06⅝	.06¾
Petrolatum, in bbls., per lb.:			
Dark green	.01¾	.02	.02
Amber	.03⅜	.03¼	.03¼
Extra amber	.03¾	.03⅜	.03⅜
Cream	.05⅝	.05¾	.05¾
Lily white	.07⅝	.07⅜	.07⅞
Snow white	.08⅝	.08¾	.08¾

*Lighterage 5.5c a barrel extra.

NEW YORK CASE EXPORT PRICES

	Oct. 19	Oct. 12	Oct. 5
Gasoline, U. S. Motor, 58-60	.27.40	.27.90	.27.90
Kerosene:			
Standard white Kerosene	.19.15	.19.15	.19.15
Water white Kerosene	.20.65	.20.65	.20.65

LOS ANGELES EXPORT PRICES

	Oct. 19		Oct. 12		Oct. 5	
Kerosene water white	.05½	.06½	.05½	.06½	.05½	.06½
U. S. Motor Gasoline, 54-56 437 e.p.	.08¾	.09¼	.08¾	.09¼	.10	.10½

CRUDE OIL PRICES

OKLAHOMA, KANSAS AND NORTH TEXAS

***Prairie Oil & Gas Co.**

(Oklahoma, Kansas and North and East Central Texas)

(Effective May 15)

28° to 28.9°	$1.65
29° to 29.9°	1.73
30° to 30.9°	1.81
31° to 31.9°	1.89
32° to 32.9°	1.97
33° to 33.9°	2.05
34° to 34.9°	2.13
35° to 35.9°	2.21
36° to 36.9°	2.29
37° to 37.9°	2.37
38° to 38.9°	2.45
39° to 39.9°	2.53
40° to 40.9°	2.61
41° to 41.9°	2.69
42° to 42.9°	2.77
43° to 43.9°	2.85
44° to 44.9°	2.93
45° to 45.9°	3.01
46° to 46.9°	3.09
47° to 47.9°	3.17
48° to 48.9°	3.25
49° to 49.9°	3.33
50° to 50.9°	3.41
51° to 51.9°	3.49
52° and above	3.57

*Other major purchasers except as noted below.

Humble Oil & Refining Co.
(Effective May 15)

(North and East Central Texas, Ranger, Mexia, Powell, Richland, Wortham, Currie, Moran, Big Lake, Nacona and Lytton Springs)

Same prices as Prairie Oil & Gas Co. schedule. Postings below 28° gravity 8 cents less for each degree, effective June 21.

Magnolia Petroleum Co.
(Effective May 15)

(Oklahoma, Kansas and North and East Central Texas, except Corsicana heavy, and Lytton Springs of South Central Texas)

Below 28°	$1.30
Other grades same as Prairie Oil & Gas Co.	
Iatan	$1.15
Corsicana heavy	1.25
Panola County:	
30° to 34.9°	$1.95
35° to 37.9°	2.10
38° and above	2.25

TEXAS PANHANDLE
Humble Oil & Refining Co.
(Effective Sept. 22)

Carson-Hutchinson Counties	$1.25
Other Fields—	

(Effective June 21)

28° to 28.9°	$1.35
29° to 29.9°	1.40
30° to 30.9°	1.45
31° to 31.9°	1.50
32° to 32.9°	1.55
33° to 33.9°	1.60
34° to 34.9°	1.65
35° to 35.9°	1.70
36° to 36.9°	1.75
37° to 37.9°	1.80
38° to 38.9°	1.85
39° to 39.9°	$1.90
40° to 40.9°	1.95
41° to 41.9°	2.00
42° to 42.9°	2.05
43° to 43.9°	2.10
44° and above	2.15

Kay County Gas Co.
Magnolia Petroleum Co.

All Fields	$1.25

Note: Magnolia Petroleum Co. prices effective September 22, and Kay County Gas Co., October 4.

WEST TEXAS

Crane-Upton Counties (Sept. 15)

Below 26°	$ .80
26° to 26.9°	.85
27° to 27.9°	.90
28° to 28.9°	.95
29° to 29.9°	1.00
30° to 30.9°	1.05
31° to 31.9°	1.10
32° to 32.9°	1.15
33° to 33.9°	1.20
34° to 34.9°	1.25
35° to 35.9°	1.30
36° and above	1.35

GULF COAST
***Humble Oil & Refining Co.**
(Effective August 30)

All fields except Spindletop

Grade A	$1.40
Grade B—	
Below 25°	1.40
25° to 25.9°	1.45
26° to 26.9°	1.50
27° to 27.9°	1.55
28° to 28.9°	1.60
29° to 29.9°	1.65
30° to 30.9°	1.70
31° to 31.9°	1.75
32° to 32.9°	1.80
33° to 33.9°	1.85
34° to 34.9°	1.90
35° and above	1.95
Spindletop	
Grade A	$1.25
Grade B—	
Below 25°	1.25
25° to 25.9°	1.30
26° to 26.9°	1.35
27° to 27.9°	1.40
28° to 28.9°	1.45
29° to 29.9°	1.50
30° to 30.9°	1.55
31° to 31.9°	1.60

*All major purchasers except as noted below. Sun Pipe Line Co. prices effective September 1.

The Texas Company
(Effective August 30)

Grade A	$1.40
Grade B	1.40
†Light Crude—	
35° to 35.9°	1.95
36° to 36.9°	2.00
37° to 37.9°	2.05
38° to 38.9°	2.10
39° to 39.9°	2.15
40° and above	2.20

†The Texas Company's postings on light crude under 35° gravity are same as Humble Oil & Refining Co.'s grades and prices for Grade B crude. Spindletop prices same as for Humble Oil & Refining Co., but classified according to The Texas Company's general schedule to 31° to 31.9° crude.

SOUTH CENTRAL AND SOUTHWESTERN TEXAS

***Magnolia Petroleum Co.**	
Luling (contract) (Eff. May 18)	$1.30
Mirando (Webb, Jim Hogg and Zapata Counties) (May 15)	1.25
Rockdale-Minerva (Milam County)	1.25
Thrall	1.00
Cullihan (Live Oak and McMullen Counties) (May 15)	1.75
†Lockhart (Lytton Springs)	
Somerset (Grayburg Pipe Line Co.):	

(Effective May 17)

28° to 28.9°	$1.25
29° to 29.9°	1.35
30° to 30.9°	1.71
31° to 31.9°	1.89
32° to 32.9°	1.97
33° to 33.9°	2.05
34° to 34.9°	2.13
35° to 35.9°	2.20
36° to 36.9°	2.29
37° to 37.9°	2.37
38° and above	2.45

*Texpata Pipe Line Co. and Humble Pipe Line Co. also post in Mirando Field.
†Lockhart prices same as for North and East Central Texas. Lockhart posted by Magnolia Petroleum Co. and Humble Oil & Refining Co.

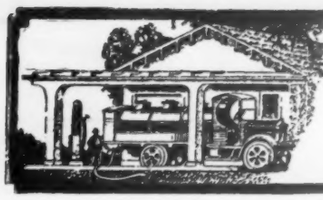
ARKANSAS AND NORTH LOUISIANA
Standard Oil Co. of Louisiana
(Effective May 18)

Caddo:	
Below 26° (July 24)	$1.40
26° to 28.9° (July 24)	1.55
29° to 31.9° (July 24)	1.70
32° to 34.9°	2.25
35° to 37.9°	2.35
38° and above	2.45
Homer below 31°	1.85
31° to 32.9°	2.00
33° to 34.9°	2.10
35° and above	2.20
Haynesville below 33°	2.00
33° and above	2.10
El Dorado below 33°	2.00
33° to 34.9°	2.10
35° to 36.9°	2.20
37° and above	2.30
Bull Bayou, 32° to 34.9°	1.95
35° to 37.9°	2.10
38° and above	2.25
Cotton Valley	1.20
DeSoto	2.30
Crichton	2.10
Bellevue (Sept. 16)	1.40
Smackover, below 24°	1.10
24° to 24.9°	1.35
25° to 25.9°	1.40
26° to 26.9°	1.45
27° and above	1.50
*Stephens, Ark., below 26°	1.45
26° and above	1.65
†Calion (East El Dorado)	1.10
‡Urania (August 26)	1.10

Other companies posting in these fields are: Gulf Pipe Line Co.; Atlantic Oil Producing Co. in Homer, Haynesville, El Dorado and Smackover. The Texas Company in Caddo, Bull Bayou, DeSoto, Crichton and Smackover.

*Posted by the Atlantic Oil Producing Co. †Posted by the Gulf Pipe Line Co. ‡Posted by the Louisiana Oil Refining Corp.

(Continued on Page 160)



TANK WAGON MARKETS

Tankwagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns, Oct. 19.

ALL TANKWAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)
Main Service Station Price

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Chicago Dist.—				
†Less than 100 gals.	19.0	21.0	...	14.5

Tankwagon prices on April 19, 1922: g. up 1½c; May 8, up 1c; June 27, g. and k. up 1c; July 19, g. down 2c; k. down 1c; Oct. 14, g. down 2c; Oct. 21, g. down 1c; Feb. 5, 1923, g. up 1c; Feb. 26, g. up 1c; Aug. 14, g. down 6.6c; Oct. 4, k. down 1¼c; Nov. 10, g. down 1.4c; Dec. 20, g. up 2c; Jan. 12, 1924, g. up 2c, k. up 1c; Feb. 5, g. up 2c, k. 1c; July 18, g. down 1c; July 30, g. and k. down 1c; Sept. 13, k. down 2c; Jan. 22, 1925, g. up 1c; Jan. 26, g. up 1c; Jan. 31, g. up 1c; Feb. 13 g. up 2c, k. up 1c; April 19, g. down 1c; July 14, g. up 1c; Aug. 25, g. down 2c, k. down 1c; Sept. 1, g. down 1c; Feb. 4, 1926, g. up 1c, k. up 1c; April 16, k. up 1c; April 24, k. up ½c; April 29, g. up 1c, k. up ½c; May 6, k. up ½c; May 17, g. and k. up 1c; July 1, k. down 1c; July 3, k. down 1c; Aug. 13, k. up 1c; Aug. 24, k. up 1c; Oct. 13, k. down 1c.

Decatur, Ill. ..	19.2	21.2	...	15.0
E. St. Louis ...	18.1	20.25	...	14.1
Joliet	19.4	21.4	...	15.2
Peoria	19.2	21.2	...	15.0
Quincy	19.2	21.2	...	14.8
Davenport, Ia.	21.5	23.5	2.0	15.4
Des Moines ...	21.5	23.5	2.0	15.4
Keokuk	21.5	23.5	2.0	15.4
Sioux City	18.9	20.9	2.0	15.0
Duluth, Minn. .	22.5	24.5	2.0	16.1
Minneapolis ...	22.2	24.2	2.0	16.1
La Cross, Wis.	22.2	24.2	2.0	15.9
Milwaukee	21.1	23.1	2.0	14.8
Madison	21.3	23.3	2.0	15.0
Detroit, Mich. .	21.8	23.8	2.0	15.7
Grand Rapids .	21.7	23.7	2.0	15.6
Saginaw	21.9	23.9	2.0	15.8
Evansville, Ind.	22.0	24.0	3.0	15.0
Ft. Wayne	21.4	24.4	3.0	15.4
Indianapolis ..	22.2	24.2	3.0	15.2
South Bend ..	23.4	24.4	3.0	16.4
Fargo, N. D. ..	23.9	25.9	2.0	18.1
Huron, S. D. ..	23.5	25.5	3.0	16.6
Sioux Falls	22.0	24.0	3.0	16.1
*K. C., Mo. ..	21.9	23.9	3.0	13.8
*Springfield ...	21.8	23.8	3.0	14.7
*St. Louis	20.6	22.9	2.5	14.5
*St. Joseph	21.0	23.0	2.5	14.4
‡Wichita, Kan.	19.8	21.8	3.0	14.3
Bartlesville, Ok.	20.8	22.8	3.0	14.3

NAPHTHAS

	Tank wagon	Tank car
Oleum spirits	21.0	15.0
V. M. & P. Naphtha	23.0	16.5
Cleaners naphtha	21.0	17.5

Tankwagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

*State tax is 3c. Remainder is city tax.
†Quantity price on more than 100 gallons, 12.0.
‡At all Kansas points a discount of 1 cent a gallon is allowed from the tankwagon postings on dumps of 50 gallons or more.

The following monthly rebate system is effective on tankwagon schedules throughout the territory of Standard Oil Co. of Indiana: Over 750 gallons, ½c; over 2,000 gallons, ¾c; over 3,000 gallons, 1c; over 6,000 gallons, 1¼c; over 10,000 gallons, 2c. If quantity bought during the year is equal to 12 times the monthly agreed purchases the discount will be paid or credited on the entire quantity less monthly payments. Service station customers will receive discount of 1 cent a gallon on purchases amounting to 200 gallons a month or 2,400 gallons a year; and 2 cents a gallon on 600 gallons a month or 7,200 gallons a year.

STANOLIND FURNACE OIL
(Standard Oil Co. of Indiana)

Less than 100 gallons	10.0
100 to 399 gallons	9.5
400 or more gallons	9.0

SOUTHWESTERN DISTRICT
***Magnolia Petroleum Co.**

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Dallas, Tex.	†17.0	17.0	1.0	15.0
Fort Worth ...	†17.0	17.0	1.0	15.0
Houston ...	†21.0	21.0	1.0	15.0
San Antonio ..	†19.0	19.0	1.0	15.0
El Paso	†21.0	21.0	1.0	15.0
Texarkana	†21.0	21.0	1.0	15.0
Muskogee, Ok.	20.0	23.0	3.0	15.0
Okla. City ...	18.0	21.0	3.0	15.0
Tulsa	18.0	21.0	3.0	15.0
Little Rock ...	22.0	25.0	4.0	14.5
Ft. Smith, Ark.	22.0	25.0	4.0	14.5

*The following is the schedule of discounts on quantity gasoline sales adopted by the Magnolia Petroleum Co. in Oklahoma: Over 750 gallons a month, ½c; over 2,000 gallons, ¾c; over 3,000 gallons, 1c; over 4,500 gallons, 1¼c; over 6,000 gallons, 1½c; over 8,000 gallons, 1¾c; over 10,000 gallons, 2c. If the quantity bought during the year is 12 times the monthly agreed purchases, the discount will be paid or credited on the entire quantity for the year less any monthly purchases.

The schedule on service station deliveries is: Over 200 gallons a month, 1c; over 300 gallons a month, 1¼c; over 400 gallons, 1½c; over 500 gallons a month, 1¾c; over 600 gallons, 2c. The same rule applies for annual purchases as in the tankwagon discounts.

†Magnolia maintains only a retail schedule in Texas with dealers and large consumers allowed a flat 3-cent discount, except at El Paso where the discount is only 2 cents.

CENTRAL SOUTH DISTRICT
Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
*New Orleans .	20.5	23.5	3.0	16.0
Alexanderia ..	20.0	23.0	3.0	17.0
Baton Rouge ..	19.0	22.0	3.0	15.5
LaFayette	20.0	23.0	3.0	16.5
Lake Charles .	20.5	23.5	3.0	17.5
Shreveport, La.	19.0	22.0	3.0	16.0
Memphis, Tenn.	20.0	23.0	3.0	17.0
Chattanooga ..	23.5	26.5	3.0	17.5
Knoxville	22.5	26.5	3.0	18.0
Nashville	21.0	24.0	3.0	18.0
Bristol	24.0	27.0	3.0	17.5
Little Rock Ark	22.0	25.0	4.0	16.0

*Tax of 2c includes city tax of 1c.
†Louisiana kerosene prices include 1-cent State tax.

SOUTHERN DISTRICT
Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Atlanta, Ga. ..	25.0	28.0	3.5	19.0
Augusta	25.0	28.0	3.5	19.0
Macon	25.0	28.0	3.5	19.0
Savannah	22.0	25.0	3.5	17.0
Birm'ghm, Ala.	22.0	25.0	3.0	18.5
Mobile ..	21.0	24.0	3.0	17.0
Montgomery ..	23.0	26.0	3.0	19.5
Clarksdale, Miss	23.0	26.0	4.0	15.5
Jackson	23.0	26.0	4.0	16.5
Natchez	22.5	25.5	4.0	16.0
Vicksburg	22.5	25.5	4.0	16.0
Jack'ville, Fla.	23.0	26.0	4.0	17.0
Miami	25.0	28.0	4.0	18.5
Pensacola	23.0	26.0	4.0	17.5
Tampa	23.0	26.0	4.0	17.0
Covington	24.0	27.0	5.0	18.0
Louisville	22.0	25.0	5.0	17.0
Lexington, Ky.	23.0	26.0	5.0	18.0

In addition to the state tax of 2c on gasoline, Montgomery has city tax of 1c on gasoline and ½c on kerosene. Prices in Georgia include ½c inspection fee on gasoline and kerosene; in Florida, an inspection fee of 0.125c; in Alabama, an inspection fee of ½c on kerosene only.

OHIO
Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
All Ohio points	23.0	26.0	2.0	17.0

ROCKY MOUNTAIN DISTRICT
Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Denver, Colo. ..	22.0	22.0	2.0	17.0
Pueblo	22.0	24.0	2.0	17.0
Grand Jct.	26.0	28.0	2.0	21.0
Casper, Wyo. ..	22.5	24.5	2.5	15.5
Cheyenne	23.5	25.5	2.5	17.0
Butte, Mont. ..	24.0	24.0	2.0	20.5
Helena	26.0	28.0	2.0	20.5
Salt Lake, Utah	24.0	26.0	3.5	18.0
Boise, Idaho ..	25.0	27.0	3.0	20.0
Twin Falls	25.0	27.0	3.0	20.0
Albuquerque, N. Mex.	28.5	28.5	3.0	18.5

ATLANTIC COAST DISTRICT
Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Atlantic City ..	19.0	...	...	16.0
Newark, N. J.	19.0	21.0	...	16.0
Annapolis, Md.	21.0	...	2.0	16.0
Baltimore	21.0	24.0	2.0	16.0
Cumberland ..	21.0	24.0	2.0	16.0
Washington ...	21.0	24.0	2.0	16.0
Danville, Va. ..	23.5	...	4.5	16.0
Norfolk	23.5	26.5	4.5	16.0
Petersburg	23.5	26.5	4.5	16.0
Roanoke	23.5	26.5	4.5	16.0
Richmond	23.5	26.5	4.5	16.0
Charleston, W. Va.	21.5	24.5	3.5	16.0
Keyser	22.5	...	3.5	16.0
Parkersburg ..	21.5	24.5	3.5	16.0
Wheeling ..	21.5	24.5	3.5	16.0
Charlotte, N. C.	23.5	26.5	4.0	16.0
Hickory	23.5	...	4.0	16.0
Mt. Airy	23.5	26.5	4.0	16.0
Salisbury	23.5	26.5	4.0	16.0
Charleston, S.C.	24.5	27.5	5.0	16.0
Columbia ...	24.5	27.5	5.0	16.0

NEW YORK AND PART OF NEW ENGLAND DISTRICT
Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Albany, N. Y. .	17.0	.....	...	13.0
*New York ...	21.0	.....	...	18.0
Buffalo	20.0	.....	...	18.0
Rochester	20.0	.....	...	16.0
Syracuse	17.0	.....	...	18.0
Boston, Mass. ..	19.0	.....	...	18.0
Augusta, Me. ..	24.0	.....	3.0	18.0
Manchester, N. H.	23.0	.....	2.0	18.0
Burlington, Vt.	23.0	.....	2.0	18.0

*Price in steel barrels.
Note: Standard Oil Co. of New York does not generally quote service station price in its territory. In most cases the service station price is 2 to 3 cents higher than tankwagon price.

NEBRASKA
Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Omaha	21.25	23.25	2.0	15.0
McCook	22.75	24.75	2.0	16.5
Norfolk	19.0	21.0	2.0	15.0
N. Platte	22.75	24.75	2.0	16.25
Scottsbluff ...	23.25	24.25	2.0	15.75

PACIFIC COAST DISTRICT
Standard Oil Co. (California)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
San Francisco.	15.0	18.0	2.0	14.5
Los Angeles ..	13.5	16.5	2.0	13.0
Fresno	15.5	18.5	2.0	17.5
Reno, Nev.	20.5	23.5	4.0	19.0
Portland, Ore. .	16.0	19.0	3.0	16.5
Seattle, Wash..	15.0	18.0	2.0	16.5
Spokane	19.0	22.0	2.0	20.5
Tacoma	15.0	18.0	2.0	16.5
Phoenix, Ariz.	22.0	25.0	3.0	21.5

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND
Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
*Pittsburgh, Pa.	19.0	24.0	...	17.0
*Philadelphia .	19.0	24.0	...	17.0
*Scranton	19.0	24.0	...	17.0
*Allentown ...	19.0	24.0	...	17.0
Altoona	19.0	24.0	...	17.0
*Erie	17.0	22.0	...	17.0
Dover, Del.	21.0	24.0	2.0	17.0
Wilmington	21.0	24.0	2.0	17.0
Spring'd, Mass.	19.0	21.0	...	18.0
Worcester	19.0	21.0	...	18.0
Boston	19.0	21.0	...	18.0
Providence, R.I.	20.0	22.0	1.0	18.0
Hartford, Conn.	21.0	24.0	2.0	18.0
New Haven ..	21.0	24.0	3.0	18.0

*Pennsylvania tax of 2c is collected by the dealer and paid by him direct to the State.

CALIFORNIA CRUDE PRICES
†Standard Oil Co.-Union Oil Co.
(Effective March 11)

Gravity—	Long Beach Huntington Beach Richfield Brea-Olinda Rosecrans Dom'gues Torrance-Inglewood	Whittier La Habra Montebello	Kern River Newhall-McKittrick Midway-Sunset Elk Hills Lost Hills Belridge	Coyote	Santa Fe Springs	Coalinga	Wheeler Ridge	Santa Maria Ventura Salt Lake
14°	.85	.85	.75	.85	.....	.75	.75	.85
15°	.87	.85	.75	.85	.....	.75	.75	.85
16°	.90	.85	.75	.85	.....	.75	.75	.87
17°	.94	.86	.75	.85	.....	.75	.75	.88
18°	.98	.86	.75	.86	.....	.75	.75	.85
19°	1.04	.87	.75	.87	.....	.75	.75	.85
20°	1.10	.89	.82	.90	.89	.79	.78	.90
21°	1.16	.91	.90	.95	.91	.86	.81	.97
22°	1.23	.94	1.00	1.04	.94	.93	.85	1.04
23°	1.28	.97	1.11	1.14	.97	1.00	.89	1.11
24°	1.34	1.01	1.22	1.22	1.02	1.07	.93	1.18
25°	1.40	1.05	1.33	1.30	1.08	1.14	.97	1.25
26°	1.46	1.09	1.44	1.38	1.16	1.21	1.01	1.32
27°	1.52	1.13	1.55	1.46	1.24	1.28	1.05	1.39
28°	1.58	1.17	1.66	1.54	1.32	1.35	.....	1.46
29°	1.64	1.21	1.77	1.62	1.40	1.42	.....	1.53
30°	1.70	1.25	1.88	1.70	1.48	1.49	.....	1.60
31°	1.76	.....	1.99	.....	1.60	1.56	.....	1.67
32°	1.84	.....	2.10	.....	1.72	1.63	.....	1.73
33°	1.92	.....	2.21	.....	1.84	1.70	.....	1.79
34°	2.00	.....	2.32	.....	1.96	1.77	.....	1.85
35°	2.08	.....	.....	.....	2.08	1.84	.....	1.92
36°	2.16	.....	.....	.....	2.16	.....	.....	.....
37°	2.24	.....	.....	.....	2.24	.....	.....	.....
38°	2.34	.....	.....	.....	2.34	.....	.....	.....
39°	2.44	.....	.....	.....	2.44	.....	.....	.....
40°	2.54	.....	.....	.....	.....	.....	.....	.....
41°	2.64	.....	.....	.....	.....	.....	.....	.....
42°	2.74	.....	.....	.....	.....	.....	.....	.....

*Column 2—Long Beach and Huntington Beach crudes, 14 to 22 degrees, inclusive; Richfield and Brea-Olinda, 14 to 30 degrees; Torrance and Inglewood, 14 to 28 degrees; Dominguez, 24 to 42 degrees. Rosecrans crude ranges from 14 to 42 degrees, but only Union Oil Co. posts below 24 degrees.
Column 3—Whittier and La Habra crudes, 14 to 22 degrees; Montebello, 14 to 30 degrees.
Column 4—Kern River, Newhall and McKittrick, 14 to 19 degrees; Midway-Sunset and Elk Hills, 14 to 33 degrees; Lost Hills and Belridge, 14 to 34 degrees.
Column 6—Santa Fe Springs. Only Union Oil Co. posts below 24 degrees.
Column 9—Salt Lake, 14 to 19 degrees, inclusive; Santa Maria, 14 to 30 degrees; Ventura, 14 to 35 degrees. Posted only by Union Oil Co.

TANKWAGON PRICE CHANGES

September 3. — Standard Oil Co. of Nebraska reduced tankwagon and service station prices of gasoline 2.75 cents at Norfolk, Neb.

October 12.—Standard Oil Co. of Kentucky tankwagon and service station prices of gasoline and kerosene 1 cent in Kentucky with a few exceptions where reductions either were less or more than 1 cent.

October 13.—Standard Oil Co. of Kentucky reduced tankwagon and service station prices of gasoline and kerosene 1 cent in Mississippi, Alabama, Georgia and Florida, except at a few points where reductions were either less or more than 1 cent.

October 18. — Continental Oil Co. reduced kerosene generally in Colorado, Wyoming and Utah 1 cent. Reductions in Idaho and New Mexico ranged from a half to 2 cents. Montana points were unchanged. In the accompanying table, kerosene was reduced 1½ cents at Albuquerque, N. Mex.

CRUDE PRICE CHANGES

October 16. — Keister, Pa., crude reduced 25 cents.

PENNSYLVANIA GASSERS

OIL CITY, Pa., Oct. 16.—David H. Culbertson of Tiona and his associates, on the Splitstone property in Eldred Township near the Warren-Crawford County line, have drilled in a well conservatively estimated at 2,000,000 feet of gas.

A gas well described as one of the best ever drilled in Mercer County has been brought in on the Sherman Drake farm, near Milburn, about 7 miles west of Grove City. It is estimated at nearly 1,000,000 feet and was drilled by the New Wilmington Gas Co. When the hole was approximately 827 feet the company decided that it was a "duster," but the drillers, Carl McFadden and Tom Drake, urged operations be extended. The flowing gas became ignited and the derrick house was destroyed. The well has now been capped.

REGENTS AS INTERVENORS

AUSTIN, Tex., Oct. 16.—Regents of the University of Texas were admitted by the Supreme Court as intervenors in proceedings testing legality of the 1925 law which authorized the sale of oil and gas rights on university lands to the highest bidder. George Thiesen, joined by the regents, are attacking its validity.

WAR *on* WASTE!

THE purpose of the Sinclair "Law of Lubrication" is to help the motorist lubricate his car to prevent *Waste of Power* and to maintain economical transportation. Read the law; know its soundness; know its simplicity; then consider its value for increasing your sales of motor oil.

May we show you the Law of Lubrication booklet which Sinclair dealers distribute to motorists?

SINCLAIR REFINING CO.
45 Nassau Street, New York

Atlanta Detroit Kansas City
Chicago Houston Omaha

[1916-26—Ten years of manufacturing and distributing petroleum products of quality]

The SINCLAIR LAW *of* LUBRICATION

For every machine *of*
every degree *of* wear
there is a scientific
SINCLAIR OIL
to suit *its* speed *and*
seal its power. . . .

SINCLAIR
OPALINE
REG. U.S. PAT. OFF.
MOTOR OIL

SINCLAIR OILS

Entire Contents Copyrighted, 1926, by Sinclair Refining Co.

Production Difficulties in Panhandle

Troubles Begin With Drilling and Continue Until the Crude Is on the Market. Engineers' Big Task

By E. O. Bennett*
Marland Oil Co.

One of the biggest factors toward salvaging oil from pools that are already in is bringing the wells in properly and doing the work properly before they are brought in, and I want to touch on a few points with reference to that, especially with reference to the Panhandle Field.

One of the main things that I think has been largely overlooked is the conservation of gas from gas pools such as we have in the Mid-Continent territory. The application of pressure for the restoration of original rock pressure is being used more and more, and I think we are all pretty familiar with the results that have been obtained, but the question overlooked is, where are we going to get the gas to restore this depleted pressure.

In the Mid Continent Field, especially in the Osage, we have a very large volume of gas produced from sands which nearly all have water in contact with the gas, or bottom water. One of the most important suggestions made in quite a while is to get the gas out of these fields, as much as we can, with a minimum loss.

Importance of Back Pressure

This leads us up to the application of back pressure, which is another very important factor to be applied to gas wells as well as to oil wells. In fact, it probably has more application to gas wells and will lead to a greater recovery than it would when applied to oil wells.

Applying a back pressure to a gas well keeps the gas from coming out of the sand, because the greater the differential from the sand into the well bore the more gas will flow into the well. This, however, affords a means of water encroachment, as the bigger the differential the greater the possibility of water coming up in your gas well and closing up part of your pore space and excluding the gas from coming in.

We notice by actual experiment if we hold back pressures, and pretty high back pressures, on a well, that the water is held down and although operating against a much higher pressure, the result is a much larger volume of gas on account of covering a greater flow space.

Wasteful Open Flow

The open flow measurements required in Oklahoma and some other states do an enormous amount of damage to gas wells. Every time you open a well to flow into the atmosphere to get a gauge of the well you create enough differential and create openings for water to come in. A method has been worked out in the Mid-Continent where you can make an open flow without blowing it into the atmosphere.

We will want to use more and more gas all over the Mid-Continent Field where we have sand suitable to artificial restoration of rock pressure, and if the gas is worth 4 cents a thousand at the well, assuming that 1,000 feet of gas when put back into the sand recovers a barrel of oil which when refined has a market value of some $8, the use of artificial pressure restoration may have an economic effect on the consumption of gas in the future. It will become a question whether it will be used for domestic and industrial purposes or to recover oil, which will have a greater total value than the gas in the first place.

I want to touch now on just a few things that are disjoined, that is, separate, that have been used successfully in the Mid-Continent and California fields and other fields toward increasing the recovery. One of these is the use of proper counterbalances on pump wheels.

It has recently been discovered that the use of band wheel counterbalances properly balanced and using dynamometers to properly balance them, taking the so-called indicator grade, we might call it, off of the band wheel balance when it is put on to get the proper balance, permits of high pumping speed with a long stroke, and the speeds that may be obtained that way in deep wells will permit strokes up to 22 per minute, and it has been found that the total lift per minute that way is equivalent to the hydraulic long-stroke pumps and the expense is not so much and it has been giving very satisfactory services in California and Oklahoma.

One other important point is where the gas lift is in general application, or before it is in general application, where a well starts to flow and then goes down and starts to flow by heads. At the time it first starts flowing by heads an auxiliary lift can be put in to keep up the flowing period of the well and decrease the gas factor. By that I mean the gas that is in the oil. If you supply auxiliary gas from the surface the amount of gas dissolved in the oil will be retained longer and will give you a greater migratory power from the pore space back of the well bore into the well, supplying the necessary gas and raising the oil to the surface. One other means along that same line is to keep suitable oil saver heads, tubing oil saver heads, such as a time when a well might flow naturally and then flow by heads. It might be tubed and flow through the tubing for a much longer period without putting in artificial pressure or a gas lift, because we can get a greater efficiency through a smaller line in lifting oil from a well.

Paraffin in Panhandle

In the Texas Panhandle one of the biggest difficulties of operation is the paraffin situation. Oil in that field ranges in the ground from 83 degrees up to about 90 degrees, as it exists in the sand. This oil is from 2,900 to 3,000 feet deep. It should be up around 120 to 150 degrees, as compared to other oils in the United States. On top of this the oil in the Panhandle congeals to a solid ball of wax at from 55 to 60 degrees, which gives a margin on an average of about 20 degrees to get oil from the sand into the pipelines or points of use.

Gas Pressure Inadequate

The gas pressure in the Panhandle Field is about 420 pounds, which is about half the hydrostatic head. It is not sufficient to flow the wells that we term the flow wells in the Panhandle. They are not what I would call flow wells, because if you shut in one of those wells and open it up again the well is dead and it is necessary to swab or agitate the gas with the oil to make it come back, and the oil in most of those so called flow wells is produced in a spray form. The gas factor is extremely high and there is an enormous amount of gas in that field which has been wasted at as great a rate as the volume exists. It is estimated that in that field the original supply of gas was about one hundred and twenty quadrillion feet. Now, to get an idea of how much that means, if we take the peak load during the closing month of the year in Texas and ran that every day in the year, there was enough gas in the Panhandle originally to run the state of Texas for 166 years. That gas is in a lime above the main pay. It varies from nothing up to 500 feet thick at different points in the field. Between the big gas and the pay it varies from nothing up to 150 feet, which in one part of the field is in a lime and in another part of the field in a granite wash. There is a shale break which varies from nothing up to one hundred feet or so. It is different in different parts of the field.

It is impossible to drill in this gas with the hole loaded. Unhydrated lime is put into the hole and then water. The water slackens down the unhydrated lime and sticks the tools in the hole. For that reason they are unable to use a rotary.

We are at present, and others I believe, are working on a method of trying to doctor this solution, so to speak, to be able to drill with a hole loaded with fluid and to be able to save the gas. At the present time I estimate that one hundred million cubic feet of gas is wasted in the Panhandle daily.

The pressures indicate that the upper gas is in contact with the oil bed, not all over, but in spots. We don't know where those spots are but the pressure declines the same in each one and since they are both less than the hydrostatic head it leads us to believe that they are in contact, and the points where they are, in coarse sands or the coarse porosity between the two are probably the areas of most prolific production.

In the oil sand itself, or in the lime

*Address before the Tulsa meeting of the Petroleum division of the A. I. M. E.

SOME IMPRESSIONS GAINED FROM THE TULSA MEETING OF ENGINEERS

By James McIntyre

The Tulsa meeting of the Petroleum Division of the American Institute of Mining and Metallurgical Engineers demonstrated several important points.

One is the industrially universal interest in new methods of producing oil, which was proven in this case by the unexpectedly large attendance of engineers from every part of the country where oil is produced. The registration showed engineers, geologists and production officials from Wyoming, Pennsylvania, Kansas, Oklahoma, California, north central Texas, west Texas, the Mexia district, the Texas Panhandle, the Gulf Coast, Indiana, Arkansas and Louisiana. Hungary was represented by Oliver Szirmai, of Budapest, who took an active part, while M. S. Mainland and D. G. Smith of London, England, representing the Anglo-Persian Oil Co., were interested listeners.

Another point demonstrated was that however much engineering skill has been applied to production problems, nothing has yet been evolved that has a general application, and that the long-known fact that each field offers its own problem, and that in some cases many leases in one field present different sets of problems, still holds good.

A third point is that assuming a certain set of conditions as to sand depth, thickness, porosity, saturation, presence or absence of breaks, expulsive force—whether gas, gas and water, or purely hydraulic, and a score or so of other things, it is possible for an engineer to work out a means of accomplishing what he sets out to do, but without much trouble, but when he runs up against the innumerable variables which characterize the production end of the oil business his method would become useless. Therefore, the engineer does not work on assumptions but on the cold facts presented by his immediate job and he plans his work to fit that particular job.

That great progress has been made in more efficient means of recovering oil and more efficient uses of gas produced by oil wells was many times shown in the papers presented at the meeting, and by the discussion that followed each paper in which engineers from widely scattered parts of the United States took part.

The water drive in the Bradford Field; the application of compressed air and residue gas to the sands in both Eastern and Western fields; the air and the gas lift as applied to deep wells in California and the Mid-Continent; the use of vacuum, which dates back to the late sixties in the Old Triumph Field in Warren County, Pennsylvania; the application of back pressure; the long-stroke pump and late pumping devices giving better and cheaper recovery and the conversion of emulsified oil into good pipeline crude, were given the most thorough exposition and interesting discussion.

The question of unit operation of new oil fields was expected to draw forth a general discussion, but the engineers for the most part fought shy of it. Those who did discuss the papers of Messrs. Dunn and Lewis, which set forth the advantages of it, were willing to admit that Dunn and Lewis had prepared a very interesting and excellent paper, at the same time giving their opinion that the plan as a rule was impracticable, principally because of the many interests it would involve both in lessees and lessors; the natural tendency in the oil business for men to think they had the best potential oil acreage in the area to be developed, and the possibility of legal entanglements.

It was noticeable how often in the course of the two days of papers and discussion the old Bradford Field was mentioned. There alone a plan had been found that successfully increased production and which was applicable all over the field. The flood or water drive, it was shown, had resulted in recovering an average of 7,500 bbls. per acre from sand that had already, over a period of 45 years, produced 3,500 bbls. per acre by normal flowing and pumping, and mention was made of one property in the Richburg, N. Y. end of the flood development which had produced an additional 13,000 bbls. per acre after it had produced for more than 40 years. But no engineer was heard to say that the water drive could be successfully used in any other specific field.

That engineers in the same territory are working together for the common purpose of bringing all the oil possible to the surface was plainly manifested. Nobody is hiding anything from anyone else and every production engineer appears to be trying to help in the effort to make the best use of the advantages Nature has provided in the way of petroleum reservoirs in this country.

The increasing use of rotary drills especially in Texas and the growing popularity of electric motors in both drilling and producing and improvements in rotary drilling outfits, including bits, the cutting edges of which are made to withstand rougher usage, thus saving several "trips" a day out of and into the hole, were points brought out by speakers. The steel derrick also came in for praise, especially from Gulf Coastal engineers.

rather than sand, there are strips of shale and when water hits this shale it swells up to several times its volume and it is very difficult to handle. It is necessary to fight some of those wells for months to get them cleaned out. If a well is on production and is shut in for two or three days it will be two or three months before it can be brought back to normal production. That is due to mud slacking down and plugging the sand around the well and also due to the accumulation of paraffin on the face of the well bore. After you start producing again, if it is a paraffin of the temperature of the oil, the oil will gradually cut it out. On the other hand we find that in some of the wells the paraffin is actually keeping the gas in with the oil, and when it does we get an exhaustion which refrigerates that oil to such a point that the paraffin congeals and that paraffin is more or less in a helpless form in the oil. It then takes usually one or two months in cleaning out.

Some of the companies in the Panhandle Field have used hot water and let it stand on the face of the sand to dissolve the paraffin. Others have used butane or high gravity gasoline to dissolve the paraffin.

It is necessary in drilling in to provide suitable minerals in the well to keep caving mud from rolling in and instead of fighting the mud out we find it better to properly line the well and keep it dry in the first place.

Fighting Paraffin

In flowing wells most of the paraffin is floated through the casing or swabbed up through the casing and we get a gradual accumulation of it which becomes bigger as we approach the well head. A scraper has been developed in that field which successfully cuts down the paraffin and cleans the casing and which won't ruin the tubing. It consists of a special cutter, working both up and down, scraping the paraffin clean of the casing.

In pumping wells in that territory it is necessary to blow them very frequently. For that reason we have recently been experimenting with the gas lift and trying to make it work. In our experiments we have come in contact with problems which have not been dealt with in any other field in the United States, because if we are able to make the gas do the work on the oil it necessarily must expand and in so doing drops in temperature. This temperature drop, if we use sufficient sized lines, causes the paraffin to congeal in the flow lines and in a short time the lines become closed up and they have to be cleaned out. In pumping wells it is necessary to clean out in four or five days.

The induction of live steam at the casinghead has given us satisfactory results in many cases. The steam serves to melt the paraffin down and it floats out with the oil.

Applying Hot Gas

In the gas lift we try to avoid the paraffin situation by the application of hot gas. In flowing through the tubing we are able to flow a well about five days and then it plugs up almost solid and the production gradually decreases. The hot gas going down keeps the tubing clean at the upper 700 feet, where the worst condition exists, and by the time it gets to 700 feet it has given up all of its heat and from that point down to the liquid level the paraffin accumulates and makes trouble.

Certain chemicals have been used and there are some which actually raise the congealing point. They were put in in a mixture when hot. They temporarily lowered the cold point on account of the effect of the wax when hot. On standing for twenty-four hours the oil treated had a higher congealing point than it had before. However, we hope that certain chemicals may be developed that we can put into flowing wells in the Panhandle Field that will keep the paraffin out or keep it down in such form we can take it out. So far this has not been done.

Heating the Pipelines

Another important method of keeping production up in the Panhandle Field is to provide suitable heaters on every phase of the pipeline for this oil. Outside of getting the oil to the well head we have to lose temperature in getting the oil into the pipelines. It is necessary to install heaters of proper size and design at the well in order that you may heat the flow line. Some fifteen days ago they had a well in the Panhandle the temperature of the oil in which dropped to 83 or 84 degrees and the production dropped down just about as the temperature did because the flow lines all over the field were frozen up, and it is a difficult proposition if you don't have adequate heat at all times to keep them going. In addition to the heat, it is necessary to have a suitable means for blowing out flow lines and tanks. If for any reason the well is shut down, unless there is a heater on the flow line, the paraffin will congeal in the flow line, plugging it absolutely tight. Our directions are to blow out the flow lines at any time the well may have to be shut in for repairs or other operations.

The installation of the gas lift, if successful, and we have hopes that we can make it successful in the Panhandle, will be one of the biggest things toward lowering the lifting cost in that field because outside of the wells that are flowing by spray the major portion of all the production is recovered by swabbing. Swabbing costs will probably run from $50 to $100 a day and will be extremely hard to conduct in cold weather, and in addition to that some of those wells are drilled very close to bottom water and on producing wells it is hard with a swab to keep from starting the water. As this water comes in it will gradually exclude the oil because it has an easier path through the sands than the oil and the swab will continue to form more water at the sacrifice of the oil.

In the wells that have been making some water on a swab, when we put them on the gas lift, we found the water disappeared entirely and we have made about the same production with the gas lift as we did with swabbing. We didn't increase it, because we felt we were getting every bit of the oil out with the swabs that the well would make.

Keeping Down the Gas Factor

An important consideration is in keeping down the gas factor. The production rate from the well should be maintained at the rate which the oil can approach the well. If this rate is exceeded by swabbing or fast pumping it will gradually cut down the production, which is almost the reverse action of water. If the gas is allowed to expand and come down and give a much larger gas factor, the gas is taken out of it at a greater rate than it would if the well was slowed up a little bit.

Electrifying the Field

One other thing that is going to help keep up the production in that territory is electrification. At the present time there is being installed in the center of that pool a large steam turbine electric plant to supply power to the entire area and another high tension line running out from Amarillo, and most of the major companies at the present are electrifying the field and will be ready to go on electric power both for drilling and pumping probably between the middle and the latter part of next month. This should keep up the production over the winter months much better than the use of steam on account of low temperatures that will be encountered.

That covers in general, I think, some of the major difficulties you are up against in keeping your production up in the Panhandle area. There may be a whole lot more points but summing them all up it looks like the Panhandle Field has all the difficulties of all the rest of the fields with a whole lot more added on top of it.

REFINERS PRESENT THEIR SIDE OF RATE CASE

(Continued from Page 146)

but also in the complaints of many individual refiners both east and west of the Mississippi.

The Tulsa hearing opened with the cross examination of E. W. Seiboldt, witness for the Roxana Petroleum Corp., which is attacking local rates from its Wood River, Ill., refinery to points east of the Mississippi River, asking a reduction approximating 15 per cent. The Roxana Petroleum Corp., with the Indian Refining Co. of Lawrenceville, Ill., previously had laid its case before the examiner in the St. Louis hearing.

Following this, the American Refining Co presented its complaint asking a reduction in gasoline rates from its Wichita Falls, Texas, refinery to points in the Carolinas where it operates bulk and service stations. In the testimony of J. B. Yeager, traffic manager of the American Refining Co., it was pointed out that low pipeline tariffs and water rates had enabled eastern and Gulf Coast refiners to establish a tankwagon and service station market in the Carolinas far below what the American Refining Co., could operate on by shipping gasoline on the present rail rates from its Wichita Falls refinery. The American Refining Co., as a result, has been forced to buy gasoline from a competing Gulf Coast refiner, who could ship on a low tanker rate.

Mid-Continent Situation

In the session Saturday morning, the Transcontinental Oil Co., through W. W. Klingensmith, traffic manager, presented a similar complaint against rates from its Mid Continent plants to points east of the Mississippi River, as did the Manhattan Oil Co. of Kansas City, through A. T. Sindell. The Manhattan Oil Co. charged that nearly all rates from its Kansas City, Kan., plant were unjust.

The Mid-Continent Refiners' Traffic Association complaint came up Monday morning. The association, in behalf of the many refining companies of which it is composed, is ttempting to obtain a general adjustment of rates to points in its objective territory as previously mentioned to provide for one-figure through rates properly leveled as against the existing basis of combination of local rates and proportionals on the Mississippi River.

At present through rates are in effect from Oklahoma to Illinois points and will be in effect soon in Indiana but a further extension is sought. Mid Continent refiners maintain the combination rates make it practically impossible to compete with refineries located at the Mississippi River and other points served by pipelines from the Mid-Continent Field. It is charged that the present combination rates force the shippers to pay a great part of the costs, that is the writing of the business, billing and much of the handling, twice.

A tangle has been injected into the case with the testimony of some witnesses that if the Mid Continent refiners obtained lower one figure rates refiners east of the Mississippi would ask additional reductions in local rates. The 15 per cent reduction in local rates sought by refiners east of the Mississippi River was asked in view of present Mid-Continent rates, it was pointed out.

Pipeline and Water Rates

That pipeline tariffs on crude and water rates on petroleum products would play an important part in the cases was indicated by the testimony offered and by questions of attorneys in cross-examining witnesses. One of the chief points brought out so far was that pipeline and water rates are so low in comparison to rail rates that refineries situated for tanker shipments or only short rail hauls and getting their crude by pipeline are able to get the business from Mid-Continent refiners in the heart of the oil fields who have to market their products by long rail hauls.

An array of attorneys representing both the carriers and the shippers are at the Tulsa hearing and in addition all sessions are being attended by traffic men representing nearly all Mid-Continent and Mississippi Valley refining companies. After the Tulsa investigation, a third hearing will open at Atlanta, Ga., November 17.

NEW ANGLES DEVELOP IN PATENT CLUB CASE

(Continued from Page 146)

affidavits, thus making it a valid, distinctive invention anyway.

The Adams invention, filed with the patent office in 1901 and held secretly there until four or five years later, is of importance in connection with the Holmes-Manley process, also controlled by The Texas Company. The government has tried to prove the Adams process worthless by its having been anticipated by prior patents and has also charged fraud. The alleged false affidavits, it was stated by the defense, were filed by Adams following his invention, after the government told him parts of his apparatus were found in prior processes, but later Adams filed claims to essential features not concerned in the affidavits, the defense contends.

Robert E. Wilson, assistant in charge of research and oil cracking expert of the Indiana company, who was on the stand continuously for several days, backed up Mr. Wiles in his assertion concerning the Adams patent. Mr. Wilson also contended that important features of the Adams process were not anticipated by any other, and that there is no foundation in the contention that the Dubbs and Lang patents are the bases for the Adams process.

Dr. Wilson's Testimony

Mr. Wilson's first testimony related to the importance of cracking processes from the viewpoint of the public. In illustrating the necessity for patent protection on certain processes, he pointed out that the public had come to regard pure white gasoline as the best, that the process to produce this was therefore more valuable than the process which would produce a gasoline without regard to color. Other factors of value, he said, were an odor that was not offensive, and an absence of gum forming qualities in the gas. Oil companies today, he said, are putting out a better grade of gasoline than some cars can fully utilize.

Patents Valid

Mr. Wilson attempted to refute the claim of the government that the patents involved in the case and other patents are worthless and cannot be so pooled as not to violate the Sherman antitrust law. The Burton process, which has been legally owned by the Indiana company since 1912, was not anticipated by any prior patent that would make it worthless, he said. It provided the first process by which gasoline was cracked in commercial quantities and was supreme in the cracking field up to 1919. The other principal processes involved in the suit are the Holmes-Manley, owned by The Texas Company, Ellis or tube and tank, owned by the Standard Oil Co. (New Jersey), and the Cross process, owned by the Gasoline Products Co.

The defense holds that the arrangement for pooling does not constitute a selfish combine, but rather an attempt to give greater use to the patents and to protect each user from legal entanglements that would otherwise have resulted had there been no contract. Furthermore, it is shown that since this agreement began formation about 5 years ago there have been no increases in the price of leases for patents nor any division of territory restricting smaller companies from joining the arrangement.

Under examination by Mr. Wiles, Mr. Wilson said that the mechanical operation of the Burton method is very much the

same as that of "prior art" models for cracking gasoline, such as the Berbe process. But the starting stock for the Berbe method, he explained, is petroleum, whereas for the Burton it is gas oil.

The Burton process, he said, also minimizes the coke difficulty much better than the Berbe method. With these and mechanical improvements for safety and ease in extracting the gasoline, Mr. Wilson said there is no doubt that the Indiana company has a distinctive and legalized method patented by the government for restrictive use.

Seymour C. Anderson, sales expert for Standard Oil Co. of Kentucky, formerly with the engineering staff of the Indiana company, aided Mr. Wilson in identifying and describing certain heating apparatus of the Burton still, in Mr. Wilson's detailed explanation of the process.

Features of Process

Mr. Wilson next took up the Ellis tube and tank process and the Cross process, and gave considerable testimony to prove the validity of these methods. While certain features of both processes were developed from prior art, the defense expert explained that none of these prior inventions could produce the gasoline with the minimized coke difficulty, with as good quality and as rapidly as the processes owned by the defendants Mechanically, he said, the principal distinctive feature of the processes is the use of large reaction chambers between the heating coils of the gasoline still, this accelerating the cracking. The prior inventions, he said, had no such chambers, and coke accumulated much more rapidly.

The government's counsel includes in addition to Mr. Royce, Horace B. Lamb, special assistant attorney general; James Fowler, of Knoxville, Tenn., and Benjamin T. Rauber, a patent attorney. John W. Davis heads the counsel for the company defendants. Russel Wiles is conducting the presentation of the defense. Former governor of New York, Nathan L. Miller, appears for Joseph E. Adams.

NORTH AND WEST TEXAS

(Continued from Page 48)

oil or gas showed up. Total depth is 4,448. The Masters Pool has been one of the biggest disappointments this year in north Texas, so far.

A sizeable acreage and production purchase was made during the past week in the Wichita Falls district. Shappel Oil Co. bought the holdings of the Plains Production Co. in Archer County, including a 20-acre lease with three producing wells making 1,100 bbls. daily, and two drilling wells in the Turbeville Pool, Section 171, Robert Carson Survey. The deal also included a 42-acre lease in the Prideaux Pool, John Dorsey Survey, with four wells producing 40 bbls. daily. The consideration was $237,500.

NORTH TEXAS COMPLETIONS

Archer County

American Refining Co.'s No. 1 Turbeville-B was estimated good for 15 bbls. at 1,490-94 feet, total depth 1,505 feet. Atlantic Oil Producing Co.'s No. 7 Oldham was dry and abandoned at 1,350 feet. Bridwell & Heydrick's No. 1 Abercrombie & Taylor-B was also a duster at 1,310 feet. Burns and others' No. 2 Turbeville swabbed 700 bbls. at 1,507-23 feet. Reese Carter's No. 1 Wilson was estimated at 25 bbls. of oil and 15 bbls. of salt water from sand at 1,513-15 feet but was not completed. Gates and others' No. 14 Thomas pumped 55 bbls. initially at 1,155-67 feet; and No. 16 Thomas made 70 bbls. at 1,148-71 feet. H. J. Heartwell's No. 1 Wilson was dry and abandoned at 1,645 feet. Gulf Production Co.'s No. 2 Kell Kempner-C swabbed 120 bbls. and pumped 95 bbls. at 1,800 feet; No. 1 Melugin was dry at 1,603 feet.

Humble Oil & Refining Co.'s No. 18 Hamilton swabbed 146 bbls. in the first 13 hours at 1,261-68 feet. T. F. Hunter's No. 1 Wilson made 100 bbls. at 1,645-48 feet. Jeffers & Newby's No. 2 Andrews-B was a failure at 973 feet. Magnolia Petroleum Co.'s No. 4 Hudson made 22 bbls. at 1,160-67 feet. Marland Oil Co. and Kentucky Oil Co.'s No. 2 White made 16 bbls. of oil and 5 bbls. of salt water at 1,165-67½ feet.

Marland Oil Co.'s No. 4 Turbeville made 200 bbls. at 1,513-17½ feet; No. 7 Turbeville swabbed 600 bbls. at 1,493-1,525 feet. Marland Oil Co. and Bass & Dillard's No. 1 Perkins was completed for 35 bbls. of oil and 15 bbls. of salt water at 1,763-64½ feet, total depth 1,766½ feet. Mid-Kansas Oil & Gas Co.'s No. 4 Andrews was dry and plugged at 1,627 feet.

Pandem Oil Corp.'s No. 9 Thomas was a failure at 1,478 feet.

Petroleum Producers Co.'s No. 2 Turbeville swabbed 900 bbls. at 1,492-1,523 feet; No. 3 Turbeville swabbed 1,821 bbls. the first 24 hours at 1,497-1,524 feet. Plains Production Co.'s No. 1 Turbeville flowed 450 bbls. at 1,489-1,500 feet; No. 2 Turbeville swabbed 400 bbls. at 1,496-1,523 feet; No. 3 Turbeville flowed 170 bbls. in the first 16 hours at 1,492-1,517 feet. Roxana Petroleum Corp.'s No. 6 Abercrombie & Taylor made 110 bbls. at 1,330-34½ feet and 1,343-53 feet.

Shappell Oil Co.'s No. 1 Yeatts and others was dry and abandoned at 1,875 feet. Simms Oil Co.'s No. 9 Turbeville-A flowed 40 bbls. an hour and swabbed 930 bbls. in 24 hours. Simms Oil Co. and Burns' No. 1 Turbeville-A swabbed 230 bbls. at 1,498-1,504 feet. The Texas Company's No. 10 Turbeville-C swabbed 1,171 bbls. in its first 24 hours from pay sand at 1,499-1,526 feet; No. 11 Turbeville-C swabbed 725 bbls. at 1,493-1,524 feet. The Texas Company and H. Hines' No. 1 Thom was a failure and plugged at 1,910 feet. Texhoma Oil & Refining Co. and Staniforth's No. 9 Kemp & Kempner, in Block 63, pumped 73 bbls. at 1,790-92 feet. Tidal Oil Co.'s No. 1 Farmer swabbed 35 bbls. in 24 hours at 1,492-94 feet and 1,468-73 feet. Wanderer Oil Co. and Parkins & Cullum's No. 2 Turbeville pumped 100 bbls at 1,497-1,503 feet.

Brown County

Berryman and others' No. 1 McClanahan was dry and abandoned at 1,142 feet. Choate & Henshaw's No. 1 Lowe made 500 bbls. at 1,300-16 feet. Humble Oil & Refining Co.'s No. 2 Wooldridge had sand at 1,238-73 feet and after a shot of 60 quarts at 1,254-73 feet was good for 250 bbls.; No. 3 Wooldridge was shot with 60 quarts at 1,244-64 feet and made 150 bbls. initially.

Hurley Oil Co.'s No. 1 Perry was dry and abandoned at 2,179 feet. Kone Production Co.'s No. 6 Foster made 100 bbls. at 1,204-24 feet. McKenna and others' No. 7 Foster was shot with 20 quarts at 1,165-84 feet, total depth 1,186 feet and made 100 bbls. afterward; No. 11 Foster made 125 bbls. at 1,199-1,219 feet; and No. 12 Foster produced 100 bbls. after a 100-quart shot at 1,186-1,206 feet, total depth 1,209 feet.

McLester Oil Co.'s No. 8 Josie Wooldridge swabbed 300 bbls. at 1,255-70 feet. Magnolia Petroleum Co.'s No. 2 Fry made 60 bbls. at 1,321-24 feet. Sawyer and others' No. 2 White estate produced 85 bbls. at 1,219-21 feet and 1,223-41 feet. T. B. Slick's No. 2 Newton made 15 bbls. of oil and 12 bbls. of water from sand at 2,918-42 feet, total depth 2,975 feet. Tidal Oil Co.'s No. 1 Hodnett topped sand with a showing of oil at 1,180 feet and was pulling big pipe. West and H-Y Oil Co.'s No. 15 Newton was shot with 40 quarts at 1,210-37 feet and made 50 bbls.; No. 18 Newton was dry and abandoned at 1,260 feet. Williams and others' No. 1 Lawson was dry and plugged at 1,332 feet. Wilson and others' No. 1 Stone produced 50 bbls. initially from sand at 1,217-44 feet. Schoomnacker's No. 1 Cleveland topped lime at 1,646 feet carrying a small show of oil and was drilling at 1,652 feet. Wilhausen and others' No. 1 Bourn Brothers was dry and abandoned at 1,410 feet.

Coleman County

Burke-Greis Oil Co.'s No. 5 Dibrell had pay at 1,906-21 feet, total depth 1,931 feet, and after a 20-quart shot it made 2 bbls. Schermerhorn Oil Co.'s No. 1 Gray was dry and abandoned at 2,712 feet. Urban's No. 1 Gray was estimated good for 25 bbls. at 2,503-04 feet, but was fishing bailer.

Callahan County

Humble Oil & Refining Co.'s No. 1 Irvin topped the Caddo lime at 2,760 feet. It had a show of oil at 2,790 feet and was drilling ahead at 2,820 feet.

Eastland County

Gulf Production Co.'s No. 1 H. F. Ferrell was dry and plugged at 2,256 feet. Corzelius Brothers' No. 1 Norris was dry and abandoned at 3,305 feet. Lewis and others' No. 1 fee had 1,500 feet of oil in the hole following a 240-quart shot at 3,168-3,200 feet, total depth 3,240 feet.

Jack County

Burke-Greis Oil Co.'s No. 1 Loving was dry and plugged at 2,601 feet. Watchorn Oil & Gas Co.'s No. 1 Carpenter estate was also a failure at 3,198 feet.

Mills County

Bowers and others' No. 1 Ratliff was dry and abandoned at 1,275 feet.

Palo Pinto County

Owens and others' No. 1 Gilbert was completed for 4,500,000 feet of gas at 3,833-43 feet.

Shackelford County

Albany Oil Co.'s No. 9 Moberly pumped 40 bbls. at 1,195-1,204 feet. Googan's No. 1 Nail was dry and abandoned at 1,715 feet. Haile & Knight's No. 1 Reynolds was also plugged as a duster at 1,545 feet. Hughes and others' No. 1 Diller Brothers was another failure at 1,531 feet.

Humble Oil & Refining Co.'s No. 9 Cook made 200 bbls. from the second sand at 1,355-70 feet. Marland Oil Co. abandoned No. 1 Matthews as a failure at 1,350 feet. Mid-Kansas Oil & Gas Co.'s No. 1 Goodwin was estimated good for 40 bbls. from sand at 1,560-78 feet but had another sand at 1,582-84 feet but was drilling deeper. Robert Oil Corp.'s No. 1 Matthews was dry and abandoned at 1,528 feet. Roeser & Pendleton and Marland Oil Co.'s No. 32 Cook, A-82, pumped 139 bbls. from sand at 1,325-40 feet, total depth 1,345 feet; No. 17 Cook A-85 had sand at 1,281 87 feet, lime from there to 1,292 feet and another sand at 1,292-93 feet, making 100 bbls.; No. 1 Cook A-116 was dry and abandoned at 2,001 feet. Roeser & Pendleton's No. 9 Cook B-60 was a duster at 1,228 feet; No. 10 Cook B-60 was dry and plugged at 1,210 feet; No. 11 Cook B-60 pumped 25 bbls. from sand at 1,125-31 feet after plugging back from 1,220 feet; No. 17 Cook B-85 pumped 20 bbls. from sand at 1,199-1,219 feet. Tannehill Oil Co.'s No. 1 Moberly, in Section 59, flowed 721 bbls. initially along with 2,500,000 feet of gas from sand at 1,127-35 feet.

Stephens County

Humble Oil & Refining Co.'s No. 1 Cockrell was shot with 80 quarts at 3,249-81 feet and made 10 bbls. of oil and 500,000 feet of gas. Jones' No. 32 Swenson was dry and abandoned at 2,300 feet. Phillips Petroleum Co.'s No. 4 Akin was shot with 32 quarts at 3,297-3,335 feet in lime and made 20 bbls.

Wichita County

Bridwell & Heydrick's No. 9 Ward & Todd had sand at 1,830-44 feet and lime at 1,876-78 feet. After a 15-quart shot it pumped 75 bbls.; No. 11 Ward & Todd swabbed and flowed 300 bbls. at 1,846-78 feet. Clark & Campbell's No. 1 Ward & Todd-E flowed 150 bbls. at 1,858-79 feet; the rig for No. 1-F was abandoned. Clark and others' No. 9 Ward & Todd was estimated good for 100 bbls. at 1,885-98 feet; No. 10 swabbed 103 bbls. in 14 hours at 1,836-60 feet and 1,870-78 feet. Clark, Waggoner and Hammond's No. 1 Ward & Todd, a recompletion, made 100 bbls. at 1,861-81 feet; No. 2 flowed 100 bbls. from sands at 1,770-78 feet, 1,803-10 feet and 1,890-1,903 feet. Cook & Reeder's No. 1 Overby pumped 10 bbls. at 488-91 feet; No. 2 pumped 10 bbls. also at 487-90 feet. Craig & Wilson's No. 3 Hobson was dry and abandoned at 1,861 feet, although it had a 2-bbl. show at 912-21 feet.

Gulf Production Co.'s No. 21 Forbes-Burnett pumped 4 bbls. at a total depth of 1,575 feet; No. 19 Jennings-A pumped 10 bbls. at 1,632 feet; No. 63 R. J. Miller pumped 8 bbls. in 12 hours at 1,958 feet. Magnolia Petroleum Co.'s No. 3 Fassett pumped 8 bbls. at 1,359-67 feet; No. 18 Pratt-A was dry and abandoned at 1,900 feet; No. 22 Ramming-A pumped 17 bbls. at 1,558 70 feet. Skelly Oil Co.'s No. 7 Ramming pumped 12 bbls. in the first 12 hours at 1,563-77 feet, total depth 1,596 feet; No. 14 Ramming had sand at 1,557-70 feet and after plugging back from 1,679 feet pumped 100 bbls. W. C. Young's No. 1 Logan and others was dry and abandoned at 1,802 feet.

Wilbarger County

Barkley & Meadows' No. 14 Stephens-A drilled red and black granite from 2,970 to 3,007 feet and then was plugged back to sand at 2,041-59 feet where it pumped 25 bbls. Magnolia Petroleum Co. was plugging to abandon its No. 51 Piper at 2,055 feet. Murchison & Fain's No. 1 Waggoner-E pumped 100 bbls. of oil and 35 bbls. of water the first 12 hours from sand at 1,974-92 feet, and 120 bbls. of oil and 5 bbls. of water the second 12 hours. Phillips Petroleum Co.'s No. 1 Waggoner-C swabbed 175 bbls. in 18 hours at 2,345-49 and 2,351-60 feet. It pumped 110 bbls. later. Same company's No. 6 Waggoner-H had lime at 2,304-08 feet and sand at 2,333-37 feet, total depth 2,396 feet and swabbed 200 bbls.; No. 7 Waggoner-H swabbed 175 bbls. from sand at 2,396-2,416 feet, total depth 2,430 feet; No. 10 Waggoner-NX found water sand at 2,574 feet and was plugged back to 2,561½ feet. It swabbed 95 bbls. from lime at 2,535-40 feet.

Young County

Atlantic Oil Producing Co.'s No. 10 Rachuig-B made 15 bbls. at 1,055-68 feet. Bridwell & Mayfield's No. 8 Williams was dry and plugged at 661 feet. Long and others No. 5 McCaghren was abandoned as a failure at 959 feet. It had 300 feet of oil in the hole along with some water at 954-59 feet. Madden & Hunt's No. 10 Benson was dry and abandoned at 917 feet. McMullen and others' No. 4 Prideaux was dry and plugged at 600 feet. Moran and others' No. 1 Stewart had 600 feet of oil in the hole from broken sand at 771-806 feet and was put on the pump. Navarro Oil Co.'s No. 2 Dunagan swabbed 5 bbls. from sand at 1,074-79 feet but was plugged as a failure at 1,103 feet.

Robert Oil Co. and Carter & Ruff's No. 8 Stewart made 60 bbls. at 807-34 feet. Simms Oil Co., Cosden and Consolidated Oil Co.'s No. 4 Gregg was dry and abandoned at 602 feet. The Texas Company's No. 18 Beardon swabbed 130 bbls. at 1,058-85 feet; No. 3 Stewart made 17 bbls. from sand at 817-22 feet. Tidal Oil Co.'s No. 17 Benson-A was abandoned as dry at 928 feet; No. 20 Benson-A was also plugged at 930 feet.

Nance & Lucas' No. 2 Boozer made 50 bbls. at 2,178-90 feet. Pitzer & West's No. 5 Burgess was a failure and plugged at 2,228 feet.

WEST TEXAS COMPLETIONS

Crane County

The Texas Company's No. 6 King pumped 120 bbls. after a 60-quart shot at 2,305-49 feet. Pay was found from 2,301-52 feet.

Ector County

Simms Oil Co.'s No. 1 Edwards, C SW, Section 44, Block 43, near the Crane County line, was plugging to abandon at 3,732 feet with a hole full of water. Skinner and Eastland Oil Co.'s No. 1 J. W. Buchanan, C NW, Section 20, Block 45, T. & P. Survey, T-2-S, was also preparing to plug at 3,523 feet.

Garza County

Deep Rock Oil Co.'s No. 1 Swenson, C, Section 26, Block 2, H. & G. N. Survey, was abandoned as dry at 3,502 feet. Emerald Oil Co.'s No. 1 J. M. Boren was flowing 7 bbls. daily through 2-inch tubing at 2,600 feet.

Reagan County

Simon and others' No. 1 Wolters was dry and abandoned at 3,110 feet. Texon Oil & Land Co.'s No. 53 University, Group 1, pumped 68 bbls. at 2,970-90 feet; No. 5-A, Group 1, pumped 100 bbls. at 2,860-85 feet.

Upton County

Dixie Oil Co.'s No. 6 Hughes made 288 bbls. at 2,040-2,181 feet; No. 7 Hughes flowed 700 bbls., none of which was wa-

ter, from lime pay at 2,039-55 feet. Marland Oil Co.'s No. 14 Sanger swabbed 20 bbls. at 2,185-2,270 feet; No. 3-A Burleson pumped 48 bbls. at 2,125-95 feet; No. 29 Burleson was shot with 180 quarts at 2,135-75 feet. top of pay at 2,150 feet, and swabbed 60 bbls.; No. 30 Burleson also topped pay at 2,150 feet and after a 40-quart shot at 2,198-2,205 feet swabbed 40 bbls.; No. 33 Burleson pumped 445 bbls. at 2,150-67 feet.

The Texas Company's No. 9 King, on the south line of Section 11, Block 3½, was estimated to have flowed about 3,600 bbls. of oil and an equal quantity of water in its first 24 hours on October 11 from a total depth of 2,150 feet, top of first pay at 2,010 feet. On October 13 it flowed 658 bbls. of oil and 4,922 bbls. of water.

BIG PANHANDLE WELL

AMARILLO, Tex., Oct. 19—The Gulf Production Co.'s No. 11 Johnson, Section 70, Block 46, Hutchinson County, when deepened 5 feet started flowing at the rate of 200 bbls. hourly.

TEXAS PANHANDLE

(Continued from Page 47)

63, Block 3, was shot with 40 quarts at 3,100-49 feet and made 150 bbls. afterward. This well had gas at 2,918 feet and a show of oil at 3,018-40 feet. Wilcox-Pampa Oil Co.'s No. 9 Worley & Reynolds, Section 62, Block 3, produced 30 bbls. after a 120-quart shot at 2,969-3,000 feet, total depth 3,020 feet; No. 10 flowed 140 bbls. following a shot of 20 quarts at 3,075-95 feet and another shot of 40 quarts at 3,035-64 feet; No. 13 flowed 2,000 bbls. from granite wash at 2,863-82 feet; No. 14 flowed 90 bbls. an hour from granite wash at 2,938-50 feet. This well had a slight spray of oil at 2,872-2,908 feet.

Hutchinson County

North of the Canadian River, Goldelline Oil Co.'s No. 2 J. A. Whittenburg-B, Section 83, Block Z, swabbed 20 bbls. at 3,083-86 feet. Murchison & Fain's No. 2 W. D. Twitchell, in the Twitchell Survey, was shut down at 2,918 feet with 1,500 feet of oil in the hole. Phillips Petroleum Co.'s No. 1 J. J. Perkins in Section 1, Block X02, had pay lime at 2,870-2,905 feet and was shot with 80 quarts at 2,858-2,903 feet, making 300 bbls.; No. 3 had pay at 2,927-53 feet and after a 60-quart shot at 2,929-53 feet flowed 210 bbls.

South of the river, American Refining Co.'s No. 1 J. F. Weatherly, Section 19, Block Y, topped the pay at 2,940 feet, and found another at 2,990-97 feet, flowing 500 bbls. Devonian Oil Co.'s No. 1 Johnson-A, Section 66, Block 46, made 60 bbls. after a 250-quart shot at 2,853-2,924 feet. Dan A. Japhet's No. 4 Smith, Section 11, Block Y, was good for 400 bbls. when shot with 40 quarts at 2,740-80 feet, total depth 2,782 feet; No. 5 bridged after a 90-quart shot at 2,840-60 feet.

Marland Oil Co.'s No. 4 J. F. Weatherly-B, Section 19, Block Y, produced 100 bbls. initially when shot with 80 quarts at 3,014-40 feet. Same concern's No. 9 J. A. Whittenburg-A, in the Mary Whitley Survey, flowed 400 bbls. following a 60-quart shot at 2,976-3,000 feet; No. 10-A flowed 960 bbls. after a 40-quart shot at 2,932-48 feet, total depth 2,951 feet; No. 11-A flowed 200 bbls. after a 40-quart shot at 2,933-48 feet, and No. 12-A made 560 bbls. when treated to a shot of 40 quarts at 2,976-89 feet, total depth 2,991 feet.

McMan Oil & Gas Co.'s No. 7 Smith, Section 5, Block Y, swabbed 200 bbls. at 2,707-72 feet; No. 4 Johnson-Martin Gray, in Section 21, Block Y, was flowing 30 bbls. an hour at 2,929 feet with the bit just 1 foot in the pay. Phillips & Heywood's No. 2 Smith, NE cor. NW SE, Section 14, Block Y, topped the pay at 2,910 feet and was flowing 2,000 bbls. at total depth of 3,064 feet.

Phillips Petroleum Co.'s No. 1 Johnson-Montford, Section 66, Block 46, was swabbing 10 bbls. at 2,810-61 feet; No. 1 Johnson-Neil, Section 68, Block 46, was spraying 10 bbls. at 2,720 feet and was being cleaned out; No. 1 J. A. Whittenburg-Burg, in the Mary Whitley Survey, was flowing 60 bbls. an hour at 2,925-60 feet; No. 3 J. A. Whittenburg-Patton, also in the Mary Whitley Survey, flowed 150 bbls. an hour after a 60-quart shot at 2,860-88 feet.

Prairie Oil & Gas Co. and Phillips Petrolem Co.'s No. 21 Johnson-A, Section 20, Block Y, flowed 400 bbls. at 2,988-3,080 feet; Prairie's No. 3 Johnson-B, Section 69, Block 46, flowed 665 bbls. in the first 16 hours at depth of 2,902-17 feet. Skelly Oil Co.'s No. 2 Johnson in Section 20, Block Y, made 1,200 bbls. from pay at 2,928-65 feet.

Potter County

Amarillo Oil Co.'s No. 5 Lee Bivins-A, Section 25, Block O-18, was completed as a gas well, good for 16,000,000 feet of gas at 2,650 feet.

Roberts County

Murphy and others' No. 1 A. W. Gill, Section 31, Block M-2, was abandoned at 160 feet.

Swisher County

Overson & Keagans' No. 1 H. L. Woodward was abandoned at 840 feet.

Wheeler County

Gibson Oil Corp.'s No. 1 W. E. Bentley, Section 42, Block 24, was completed for 30,000,000 feet of gas at 2,160-2,265 feet.

DAILY AVERAGE PRODUCTION AMARILLO DISTRICT

Hutchinson County

Company—	Wells	Daily Av. Last Week	Daily Av. Th's Week
Alaska Pet. Co.	1	60	65
Amerada Pet. Corp.	9	445	680
American Ref. Co.	2	70	600
Apex Oil Co.	2	240	245
Badger Oil Co.	2	175	135
R. G. Barnum	1	20	20
Buffalo Oil Co.	1	35	60
Canadian River Oil Co.	5	485	450
Canyon Oil Co.	5	11,500	9,000
Center Dome Oil Co.	1	...	...
Centerfield Oil Co.	1	...	...
Coble-Whittenberg	3	950	1,000
Continental Oil Co.	1	10	10
Currie Bros. & J. R. Phillips	2	...	...
Cockrell & McIlroy	4	510	505
Delmar Oil Co.	1	35	55
Derby Oil Co.	4	1,240	1,220
Devonian Oil Co.	3	520	500
Dixon Creek Oil Co.	21	7,000	6,700
Double Five Oil Co.	1	60	60
Douglas Oil Co. & Cline	1	15	10
E. J. Dunnigan et al	3	955	1,165
Echo Oil Co.	3	1,650	1,800
Empire Gas & Fuel Co.	7	6,515	5,900
Fly-Blackburn Oil Co.	2	250	300
Gates Oil Co.	4	400	380
Goldelline Oil Co.	3	300	305
Golding & Phillips Pet.	1	...	10
Gulf Prod. & Panhandle Ref. Co.	26	8,900	7,185
Gulf Prod. Co.	23	4,080	5,115
Heywood et al	2	60	85
J. K. Hughes Dev. Co.	15	2,190	2,700
Holmes, Currie & McKnight	3	450	450
W. H. Holmes	1	230	200
Hutchinson Co. Oil Co.	1	...	...
Dan A. Japhet	3	640	850
J. H. Lenix	1	...	10
Lenix & Patterson	1	170	275
Lucky 10 Oil Co.	3	680	700
Marland Oil Co.	42	17,710	18,870
Midwest Exploration Co.	6	1,260	970
Minnehoma Oil Co. and Kistler	1	75	75
McMan Oil & Gas Co.	16	5,790	6,900
McIlroy & Herring	4	430	410
S. D. & W. W. McIroy	6	1,770	760
McIroy Bros. et al	3	360	290
J. H. Middleton	3	60	65
Murchison & Fain	1	400	400
Newby Oil Co.	1	75	90
New Domain Oil Co.	2	125	150
Phillips & Heywood	2	1,500	2,700
J. R. Phillips	1	25	20
Phillips Pet. Co.	75	23,005	29,900
Prairie Oil & Gas Co.	24	3,050	6,100
Relief Oil Co.	2	840	1,250
Henry Riley	1	...	275
Riley & Holmes	2	420	550
Roxana Pet. Corp.	8	2,060	1,415
Ryan Pet. Co.	3	480	470
Skelly Oil Co.	13	3,800	4,800
Skiatex Oil Co.	4	1,000	1,150
J. L. Smith	2	200	210
Smith & Bynum	2	275	275
Spring Creek Oil Co.	4	910	915
Summit Oil Co.	2	370	360
Sunny Jim Oil Co.	5	700	650
Sunburst Oil Co.	2	1,450	1,350
Sunrise Oil Co.	1	5	5
Travelers Oil Co.	2	625	640
Triangle Oil Co.	2	3,000	2,900
J. D. Ward	1	60	55
J. D. Ward et al	1	50	40
Westex Oil Co.	8	3,440	3,650
White Eagle O. & R. Co.	17	3,390	3,100
J. O. Whittington	1	...	...
Total Hutchinson Co.	429	130,410	140,505
Average per well		304	308
Carson County			
Amarillo Oil Co.	1	...	...
American Ref. Co.	7	515	525
Empire Gas & Fuel Co.	1	...	35
Gates Oil Corp.	1	10	10
Gulf Prod. Co.	16	395	625
Marland Oil Co.	12	2,210	1,960
Roxana Pet. Corp.	1	425	450
W. W. Silk et al	3	110	115
Skelly Oil Co.	3	30	60
Sunny Jim Oil Co.	2	45	45
The Texas Company	11	285	260
Total Carson County	57	3,925	4,085
Average per well		72	71
Gray County			
Empire Gas & Fuel Co.	1	10	10
Gulf Prod. Co.	4	1,560	2,500
Magnolia Pet. Co.	3	75	100
McMan Oil & Gas Co.	1	325	460
Prairie Oil & Gas Co.	3	1,060	1,005
Wilcox-Pampa Oil Co.	9	2,750	3,000
Young et al	1	...	35
The Texas Company	1	20	15
Total Gray County	23	5,800	7,125
Average per well		341	330
Potter County			
Amarillo Oil Co.	1	30	30
Wheeler County			
Gibson Oil Corp.	2	150	145
Continental Oil Co.	2	135	165
Mid-Kansas O. & G. Co.	1	30	35
Midwest Exploration Co.	3	15	15
Total Wheeler Co.	8	330	360
Average per well		41	45
Grand total Panhandle	545	140,495	152,105
Average per well		276	280
Grand total 4 wks. ago	434		120,815
Av. per well 4 wks. ago			278

AUTOMATIC CONTROL MAKES GOOD RECORD

(Continued from Page 39)

The drill string will remain suspended just as long as obstructions in the bottom of the hole offer a greater resistance to the turning of the drill string than to the lifting of the drill string, and when these obstructions have been sufficiently reduced to particles by the rotation of the tools, and the resistance lessened, the drill string will again be lowered to the bottom of the hole.

Like all other inventions which are effective, one is inclined to ask, "Why didn't someone think of that before?" The principle of the automatic lift is simple enough. The draw works drum will back off when the suspended weight of the drill pipe is less than the resistance offered by the operation of the rotary machine, and the reverse is also true, and the drum will wind up and start to hoist the pipe when the resistance offered the rotary machine by the turning of the bit is greater than the resistance offered the draw works drum by the suspended weight of the drill pipe.

As the well is drilled deeper and additional joints of drill pipe are added to the string, it is necessary to have a means of changing the gear ratio between the differential and the drill pipe, in order to compensate for the increased load represented by the suspended portion of the drill pipe. With devices now in use in California it has been found that a seven-speed draw works meets every requirement in drilling to a depth of 4,500 feet.

In minimizing the human element in drilling operations, the Halliburton control fills a long felt want. It is now being rigged up on another well in central Oklahoma, and after it has operated on a few wells, much additional information should be available about its work. On the first well it performed without a single fishing job.

For practical use in the field, all complicated parts are removed and it is handled as a single unit. It is usually mounted upon its own frame, and it is connected to the line shaft and to the rotary table by standard chains and sprockets.

PRAIRIE BUILDS STATIONS ON PANHANDLE LINE

(Continued from Page 37)

being slightly ahead of the laying gangs, and the paint gangs slightly behind them

The contract for ditching the entire line has been let to E. A. MacPherson of Fort Worth, Tex. Contracts for furnishing and applying anti-corrosive material and applications have been let to the Barrett Co. and to the Standard Asbestos Insulating & Manufacturing Co. of Kansas City, Mo.

In building the line, it is the intention to operate two gangs, and it is estimated that the two gangs should lay 2 miles per day. The time required to complete the line is estimated at from five to six months. It will be ⅛-inch line and will have a capacity of 25,000 bbls. daily.

The line will have a tremendous drop in elevation. The elevation at Kings Mill is 3,286 feet above sea level; and from that point to the Addington station in southern Oklahoma there is a drop of 2,380 feet, the elevation at Addington being 906 feet above sea level. Were it not for the viscous nature of Panhandle crude it would almost gravitate along the entire distance of the line, but owing to the peculiarities of the crude, many operating problems are anticipated.

The matter of applying heat to the oil in transit is being worked out by the technical staff of the Prairie company, and it is very likely that the winter of 1927 will witness heaters installed upon the line. While no definite plans have been promulgated on this point, it is thought likely that the heaters will be placed both at the stations and at intervals between stations. The heaters at the stations will be placed in close proximity to the pumping equipment, and it is possible that the station tanks will be equipped with heating coils to assist in maintaining a suitable degree of temperature in the crude.

Anticipating that the line will be completed during the spring, the Prairie will have several months to experiment with heating problems before it will be necessary to install them upon the main line. It is now the intention to install heating equipment upon the various branches of the gathering system during the spring and summer, and in that manner determine the more suitable heating methods and equipment for installation upon the main line.

Should producing conditions in the Panhandle warrant it, it is very probable that the original 8-inch line now under construction will be amplified by the addition of several other lines.

The following equipment has been purchased for the stations: Worthington pumps and engines, Prescott pumps, National Transit pumps, De LaVergne engines and McIntosh-Seymour engines.

Hotel Reservations Should Be Made Early For A. P. I. Meeting

The impression that all available hotel room in Tulsa has been reserved for the December meeting of the American Petroleum Institute has gone abroad, but it is incorrect. The hotels of Tulsa have left the matter of hotel reservations in the hands of an institute committee, headed by W. C. Franklin, vice president of the Tidal Oil Co., Tulsa, and the committee is making room assignments as the requests come in. Up to Monday of this week less than half the rooms in the largest hotels in the city had been reserved, and no one need feel at this time that there is any danger of walking the streets of Tulsa during the meeting. It would be well, however, to make reservations at once, as it is confidently expected that the Tulsa meeting will have the largest attendance of any meeting in the history of the institute.

A committee is working on plans for one evening of entertainment of an unusual character, but the plans have not yet been completed. The institute's program this year will be a full one, and nearly every hour from morning until late in the day will be taken up in strictly business sessions, which limits the time that may be set apart for entertainment.

A number of Oklahoma oil men will entertain privately in addition to the program the institute committee will provide.

SKELLY DIRECTORS RE-ELECTED

At the annual meeting of stockholders of the Skelly Oil Co., held in Tulsa on Monday, the board of directors of the company were re-elected as follows: A. T. Ferrall, of Saginaw, Mich.; Thomas J. Meagear, New York; Glenn Ford McKinney, New York; F. A. Pielsticker, El Dorado, Kans.; C. C. Herndon, Tulsa; William G. Skelly, Tulsa, and F. T. Hopp, Tulsa.

WEST TEXAS WILDCATS

(Continued from Page 48)

93, Blk. Y, C. C. S. D. & R. G. N. G. Sur.....Spudding 35 ft.
Marland Oil Co.'s No. 2 Durham, NE cor. Sec. 82, Blk. X, C. C. S. D. & R. G. N. G. Sur.....Drilling 470 ft.
Marland Oil Co.'s No. 3 Durham, Sec. 82, Blk. X, C. C. S. D. & R. G. N. G. Sur.....Rigging up.
Marland Oil Co.'s No. 1 Mary Dawson, NE cor. Sec. 84, Blk. X, C. C. S. D. & R. G. N. G. Sur..Top sand 670 ft., drilling 2,060 ft.
Marland Oil Co.'s No. 2-D E. S. Hughes.....Rigging up.
Marland Oil Co.'s No. 2-C E. S. Hughes, NW NE Sec. 86, Blk. X, C. C. S. D. & R. G. N. G. Sur.....Swabbing 55 bbls., 2,301-23 ft. after shot.
Marland Oil Co.'s No. 3-C E. S. Hughes, SE NE NE Sec. 86, Blk. X, C. C. S. D. & R. G. N. G. Sur.....2,294-2,320 ft., 1,000 ft. oil in hole.
Marland Oil Co.'s No. 4-C E. S. Hughes, Sec. 86, Blk. X, C. C. S. D. & R. G. N. G. Sur.....Building rig.
Prairie Oil & Gas Co.'s No. 1 University, NE NE Sec. 39, Blk. 30, University Sur.....Shut down 800 ft.
Prairie Oil & Gas Co.'s No. 2 University, SE NE NW Sec. 39, Blk. 30, University Sur.....Drilling 710 ft.
Prairie Oil & Gas Co.'s No. 1 Colette, SW SW Sec. 36, Blk. 31, University Sur.....Location.
Ben D. Simon & Cromwell's No. 1 Brookfield, C SE Sec. 23, Blk. 6, H. & T. C. Sur.....Spudded 300 ft.
Simms Oil & Atlantic O. P. Co.'s No. 1 University, NE SE Sec. 39, Blk. 30, University Sur.....Spudding.
The Texas Company's No. 10 H. M. King, NW Sec. 85, Blk. X, C. C. S. D. & R. G. N. G. Sur.....Spudded 210 ft.
The Texas Company's No. 11 H. M. King, Sec. 85, Blk. X, C. C. S. D. & R. G. N. G. Sur.....Rigging up.
The Texas Company's No. 12 H. M. King, Sec. 85, Blk. X, C. C. S. D. & R. G. N. G. Sur.....Building rig.
Texas Development Co.'s No. 1 Cowden.....Shut down 3,820 ft.
Tidal Oil Co.'s No. 2-B University, SW SE Sec. 34, Blk. 30, University Sur.....Spudding 100 ft.
Tidal Oil Co.'s No. 1-C University, NW SE Sec. 34, Blk. 30, University Sur.....Building rig.

CROCKETT COUNTY

Anchor Oil Co. (Cumberland) No. 1 Couch, C NE Sec. 18, Blk. QR, D. & S. E. T. T. R. R. Sur.....Drilling 2,015 ft.
Cranfill Brothers Oil Co.'s No. 1 Harris, C NE Sec. 4, Blk. 3, Washington County Sur.....Drilling 350 ft.
Gulf Production Co.'s No. 1-D L. P. Powell, Sec. 63, Blk. BB, G. C. & S. F. Sur.....Drilling 2,325 ft.
Humble Oil & Refining Co.'s No. 1-B Powell, Sec. 63, Blk. BB., E. L. & R. Sur.....Drilling 1,105 ft.
J. K. Hughes' No. 2-A Powell, Sec. 2, Blk. BB-2, G. C. & S. F. Sur.....Drilling 2,105 ft.
J. K. Hughes' No. 3-A Powell, Sec. 2, Blk. BB-2, N. A. Miller Sur.....Drilling 2,330 ft.
J. K. Hughes' No. 2-B Powell, Sec. 63, E. L. & R. R. Sur.....Shut down 2,420 ft.
Magnolia Petroleum Co.'s No. 2 Shannon, SE SE Sec. 9, Blk. BB, E. L. R. R. Sur.....Rig on ground.
Marland Oil Co. and Wallace's No. 1 J. S. Pierce, C SE Sec. 150, Blk. O, G. H. & S. A. Sur.....Location.
Republic Production Co.'s No. 1 L. P. Powell, Sec. 62, Blk. BB, E. L. R. R. Sur.....Drilling 2,575 ft.
William Shaffer and others' No. 1 University, C SE SE Sec. 9, Blk. 47, University Sur.....Swab 5 bbls., set 6-in. with packer at 2,100 ft., shut down 2,191 ft. for fuel.
Ben Simon and others' No. 1 Shannon, C SW Sec. 10, Blk. YZ, E. L. R. R. Sur.....Drilling 2,810 ft.
J. D. Young & Cromwell's No. 1 Shannon, SE NE Sec. 4, Blk. 10.....Fishing 500 ft.
J. D. Young & Cromwell's No. 2 Shannon, SE SW Sec. 32, Blk. BB, University Sur.....Location.
H. P. Wilcox Oil & Gas Co.'s No. 1 University, C SE SE Sec. 20, Blk. 30, University Sur.....Shut down at 4,750 ft.

CULBERSON COUNTY

James H. Gardner and others' No. 1 Radford, C SE Sec. 29, Blk. 62, Pub. Sch. Ld. Sur.....Rig on ground.
Plymouth Oil Co.'s (Big Lake) No. 1 Derrick, C W half Sec. 44, Blk. 45, Pub. Sch. Ld. Sur..Shut down 350 ft. for casing.
Pure Oil Co.'s No. 1 Kloh & Rumsey.....Spudded 200 ft.

ECTOR COUNTY

J. S. Cosden and others' No. 1-A G. W. Connell, C NW Sec. 13, Blk. B-16, Pub. Sch. Ld. Sur.....Shut down 3,498 ft. for drilling line, 1,800 ft. oil in hole, top 3,465 ft.
J. S. Cosden and others' No. 1-B W. E. Connell, C NW Sec. 16, Blk. B-16, Pub. Sch. Ld. Sur.....Straightreaming 3,750 ft., total depth 3,770.
The Exploration Co.'s No. 1 Kloh & Rumsey, CEL SE Sec. 39, Blk. 45, Pub. Sch. Ld. Sur...Fishing bailer 3,875 ft.
The Exploration Co.'s No. 1 J. D. Slator, C SW Sec. 10, Blk. 45, T. & P. Twp. 1-S Sur...Rigging up.
Llano Oil Co.'s No. 3 E. P. Cowden, S.c. 5, Blk. B-14, Public Sch. Sur.....Shut down 3,508 ft., contract complete.
Sid Richardson's (Tallaferro) No. 1 Henderson, C SE Sec. 44, Blk. 43, T. & P. Twp. 3-S Sur.....Drilling 3,030 ft.
Simms Oil Co.'s No. 1 W. F. Edwards, C SW Sec. 44, Blk. 43, T. & P. Twp. 3-S Sur.....Plugging, dry at 3,732 ft.
F. E. Skinner & Eastland's No. 1 J. W. Buchanan, C NW Sec. 20, Blk. 45, T. & P. Twp. 2-S Sur.....Plugging, dry at 3,523 ft.

FISHER COUNTY

Ideal Oil Co.'s No. 1 W. F. Martin, NW NW Sec. 113, Blk. 1, T. & T. C. Sur.....Drilling 3,428 ft., salt water 3,425 ft.
R. W. Raney's No. 1 Maberry, Sec. 56, T. & P. Sur.....Shut down 1,550 ft., contract complete.

GAINES COUNTY

Hucony Oil Co.'s No. 1 Lindsey, C NE Sec. 17, Blk. C, School Land Sur.....Shut down 3,255 ft., contract comp.

GARZA COUNTY

Deep Rock Oil Co.'s No. 1 S. M. Swenson, C Sec. 26, Blk. 2, H. & G. N. Sur.....Dry and abandoned 3,502 ft.

GLASSCOCK COUNTY

Mascho & Marland Oil Co.'s No. 1 Calder, C NW Sec. 20, Blk. 32, T. & P. Twp. 4-S Sur....Drilling 2,180 ft.
Plateau Oil Co.'s No. 1 L. S. Bell, C SW Sec. 11, Blk. 35, T. & P. Twp. 5-C Sur.....Drilling 1,100 ft.

HOCKLEY COUNTY

Ricker & Dodson's No. 1 Ellwood.....Location.

HOWARD COUNTY

Humble Oil & Refining Co.'s No. 1 Douthitt, NW NW Sec. 123, Blk. 29, W. & N. W. Sur...Drilling 710 ft.
Lockhart & Co.'s No. 1 Roberts, SW SW Sec. 97, Blk. 29, W. & N. W. Sur.....Underreaming 10-in. 719 ft.
Lockhart & Co.'s No. 1 Hyman (Scott), Sec. 86, Blk. 29, W. & N. W. Sur.....Drilling 2,000 ft.
Lockhart & Co.'s No. 1-A Otis Chalk, NE SW Sec. 95, Blk. 29, W. & N. W. Sur.....Drilling 1,335 ft.
Magnolia Petroleum Co.'s No. 1 Mary Chalk, NE NE Sec. 124, Blk. 29, W. & N. W. Sur.....Show of oil 1,251 ft., half full of sulphur water 1,257-60 ft., drilling 1,275 ft.
Magnolia Petroleum Co.'s No. 3 Otis Chalk, NE SW Sec. 114, Blk. 29, W. & N. W. Sur....Drilling, hole full of sulphur water 1,330-34.
Magnolia Petroleum Co.'s No. 3-A Otis Chalk, NE SW Sec. 114, Blk. 29, W. & N. W. Sur...Swabbing 100 bbls. 1,581-99 ft.
Marland Oil Co.'s No. 4 Otis Chalk, SE SE Sec. 113, Blk. 29, W. & N. W. Sur.....Shut down 1,122 ft. for machine.
Reeves, Apperman and others' No. 1 H. R. Clay, NE SE SE Sec. 126, Blk. 29, W. & N. W. Sur.....Shut down 930 ft.

JEFF DAVIS COUNTY

Herbert Oil Co.'s No. 1 T. M. Wingo, C NW Sec. 20, Blk. G-25.....Shut down 3,012 ft.
Humble Oil & Ref. Co.'s No. 1 W. W. McCutcheon, Sec. 31, Blk. 344, G. C. & S. F. Sur.Set 6-in. 3,087 ft., total depth 3,115 ft.
J. K. Hughes Dev. No. 1 J. Z. Means, M. Robertson-3 Sur.....Fishing 550 ft.

KENT COUNTY

The Texas Company's No. 1 Barron, C NW Sec. 131, Blk. G, W. & N. W. Sur.....Shut down 4,362 ft.

KIMBLE COUNTY

Dixie Oil Co.'s No. 1 Harrison, 900 ft. N NE 40 cor. S 300 ft., No. 80 Sur.....Drilling 1,300 ft.

LAMB COUNTY

E. C. Mars and others' No. 1 Yellowhouse.....Standardizing 1,724 ft.

LYNN COUNTY

The Hart Oil Corp.'s No. 1 C. O. Edwards, NW NW Sec. 5, Blk. 2.....Shut down 1,400 ft.

MENARD COUNTY

J. R. Lewis and others' No. 1 White, C NW Sec. 8, J. Mabrey Sur.....Shut down 180 ft.

MITCHELL COUNTY

Teas & Stivers' No. 1 Pardee, SE SE Sec. 85, Blk. 97, H. & T. C. Sur.....Fishing casing 485 ft.
B. H. Cogdell's No. 1-C F. E. McKenzie, WL NW NE Sec. 226, Blk. 1-A, H. & T. C. Sur....Shut down 125 ft.
Owen & Sloan's No. 1 C. P. Conoway, C NE Sec. 30, Blk. 28, Twp. 1-S Sur.....Drilling 3,140 ft.
Magnolia Petroleum Co.'s No. 2 Foster, NE NE Sec. 17, Blk. 29, T. & P. Sur.....Fishing 1,510 ft.
Magnolia Petroleum Co.'s No. 1 G. W. Womack.....Fishing 3,106 ft.
F. P. Zoch and others' No. 1 J. J. Ford, C SW Sec. 130, Blk. 3, H. & G. N. Sur.....Drilling 2,450 ft.

NOLAN COUNTY

Hucony Gas Co.'s No. 1 Arthur Sears, C N half SW Sec. 291, J. H. Stalcomb Sur.....Drilling 2,712 ft.

PECOS COUNTY

Benedum & Trees' No. 1 J. C. Trees, C Sec. 50, Blk. 8.....Shut down for fishing tools 530 ft.
Buell and others' No. 1 Hagan, C N half NE Sec. 83, Blk. OW, G. C. & S. F. Sur.....Fishing 575 ft.
Dixie Oil Co.'s No. 1 Herschenson, SE SE Sec. 6, Blk. 51, T. & P. Twp 10 Sur.....Shut down for orders.
Kemper Kimberlin's No. 1 Blackman, C NW Sec. 24, Blk. 3, H. & T. C. Sur.....Spudded and shut down 100 ft.
Mid-Kansas-Transcontinental's No. 1 Yates, 2,300 ft. W of SW cor. Sec. 60, Blk. 1, I. & G. N. Sur.....Drilling 200 ft.
Transcontinental Oil Co.'s No. 1 Perry, NE NE Sec. 5, Blk. Z, T. C. Sur.....Straightening hole 3,535 ft.
Quinby Oil Co.'s No. 1 Townsite, Sec. 1, Blk. 267, Client Addition Sur.....Shut down 3,280 ft., show gas 3,260 ft.
Quinby Oil Co.'s No. 2 Bennett, C NW Sec. 592, Blk. 105, G. C. & S. F. Sur.....Drilling 250 ft.

PRESIDIO COUNTY

Headlock & Miller's No. 1 Tootle estate, SE SW Sec. 123, Blk. 5, D. P. R. R. Sur.....Shut down 2,340 ft.

REAGAN COUNTY

California Co.'s No. 3 University, SE NW Sec. 14, Blk. 7, University Sur.....Drilling water well, rigged up.
H. D. Camp and others' No. 1 University, CWL NE NW Sec. 34, Blk. 11, University Sur.....Shut down 2,786 ft.
Cope-Hagan & Ench's No. 1 Moore, C NE Sec. 8, E. L. R. R. Sur.....Location.
Hiawatha Oil Co.'s No. 1 University.....Location.
Marland-Texon Oil Co.'s No. 1 Sawyer, SE NE Sec. 154, Blk. 1, T. & P. Sur.....Drilling 2,475 ft.
Moody Oil Corp.'s No. 1 Sawyer, C Sec. 150, Blk. 1, T. & P. Sur.....Drilling 1,010 ft.
Roxana Petroleum Corp.'s No. 1 Boyd, NE SW Sec. 15, Blk. F, University Sur.....Drilling 2,615 ft.
Ben Simon and others' No. 1 R. A. Walters, C SE Sec. 3, G. C. & S. F. Sur.....Dry and abandoned 3,110 ft.

REEVES COUNTY

Deep Rock Oil Co.'s No. 1 Caldwell.....Location.
Schooler, Slack and others' No. 1 Abram, NE SE SE Sec. 31, Blk. 57, T. & P. Twp. 2 Sur....Drilling 3,312 ft., hole full water.
Grisham & Hunter's No. 1 State Land, C NW NW Sec. 23, Blk. 55, Pub. Sch. Ld. Sur.....Drilling 1,600 ft.
World Oil Co.'s No. 1 Biggs, C SE Sec. 65, Blk. 112, Pub. Sch. Ld. Sur.....Drilling 180 ft.

RUNNELS COUNTY

Red Bank Oil Co.'s No. 1 Fowler, CWL NW Sec. 514, J. H. Wills Sur.....Drilling 1,540 ft.
Frank Yates' No. 1 R. M. McMillan.....Location
F. P. Zoch and others' No. 1 Bruce.....Drilling 1,500 ft.

SCHLEICHER COUNTY

Beavers & Leath and others' No. 1 J. A. and W. T. Whitten, C NW Sec. 35, Blk. 11, T. O. Sur.....Spudded and shut down.
Cope & Dalton's No. 1 Sol Meyer, C SW Sec. 99, Blk. 5, E. L. R. R. Sur.....Drilling 2,010 ft.

SCURRY COUNTY

Northwest Co.'s No. 1 T. C. Stinson.....Cement 610 ft.

STERLING COUNTY

California Co.'s No. 1 Davis, SW NE Sec. 255, Blk. 2, H. & T. C. Sur.....Drilling 405 ft.
Co-Operative Lease & Dev. Co.'s No. 1-A E. W. Douthitt, SW SE SE Sec. 173, Blk. 29, W. & N. W. Sur.....Shut down for orders 3,232 ft.
The Exploration Co.'s No. 1 C. A. Boone, C NW Sec. 21, Blk. 11, S. P. Sur.....Hole full surphur water 3,011 ft., shut down.
H. D. Rummel's No. 2 Clark.....Shut down 1,175 ft.

STONEWALL COUNTY

Arkansas Fuel Co.'s No. 1 Craft.....Shut down 4,420 ft.
Ward Syndicate's No. 1 J. A. Ward.....Shut down 3,838 ft.

TERRELL COUNTY

Sun Oil Co.'s No. 1 Scott, C NE Sec. 12, Blk. R, T. C. Sur.....Drilling 1,575 ft.
E. T. Williams and others' No. 1 Robertson, C NE Sec. 71, Blk. D-10, T. C. Sur.....Shut down for underreaming 2,800 ft., hole full of water.

TERRY COUNTY

Kingsland Oil & Potash Co.'s No. 1 Brownsfield.....Rigging up.

TOM GREEN COUNTY

M. D. Bryant and others' No. 1 Llane Co. Sch. Ld., SE NW Sec. 13, Llane Co. Sch. Ld. Sur.....Shut down 2,980 ft.
Texon Oil & Land-Marland's No. 2 Sorrell, C S half Sec. 265, Christian Mance Sur.....Drilling 1,110 ft., hole full water 1,080 ft.
World Oil Co.'s No. 1 Pulliam, NW SE SW Sec. 18, Blk. 4, H. & T. C. Sur.....Drilling 3,435 ft.

UPTON COUNTY

Amerada Pet. Corp.'s No. 1 Hughes, William Teer Sur.....Drilling 1,600 ft.
Atlantic Oil Prod. Co. and others' No. 1 Baker, SW SE Sec. 7, Blk. R, M. S. Denton Sur.....Location.
Atlantic Oil Prod. and others' No. 1 Sherk, NE cor. SW Sec. 3, Blk. 1, M-K-T Sur.....Building rig.
Dixie Oil Co.'s No. 9 Burleson, Sec. 100, T. C. Jones Sur.....Drilling 920 ft.
Dixie Oil Co.'s No. 10 Burleson, Sec. 100, T. C. Jones Sur.....Drilling 540 ft.
Dixie Oil Co.'s No. 11 Burleson, Sec. 11, T. C. Jones Sur.....Rig on ground.
Dixie Oil Co.'s No. 8 Burleson, Sec. 2, John Nidever Sur.....Plugging off sulphur water 2,200 ft.
Dixie Oil Co.'s No. 8 Hughes, Sec. 4, William Teer Sur.....Rigging up.
Dixie Oil Co.'s No. 9 Hughes, Sec. 4, William Teer Sur.....Rigging up.
Dixie Oil Co.'s No. 10 Hughes, Sec. 4, William Teer Sur.....Rigging up.
Dunning and others' No. 1 McElroy, C NE Sec. 155, Blk. E. C. C. S. D. & R. G. N. G. Sur.....Location.
Dunning and others' No. 2 McElroy, C NW Sec. 134, Blk. E. C. C. S. D. & R. G. N. G. Sur.Location.
Gulf Production Co.'s No. 1 Hughes, Sec. 4, William Teer Sur.....
Gulf Production Co.'s No. 1 J. H. Shirk-D, SE NE Sec. 5, Blk. 3, M-K-T Sur.....
Gulf Production Co.'s No. 1 J. H. Sherk-E, SW cor. NE Sec. 35, Blk. 1, M-K-T Sur.....Building rig.
Gulf Production Co.'s No. 1 Sanger, CNL Sec. 14, Blk. 3, M-K-T Sur.....Fishing tools 3,315 ft. Hole full of water.

Hults and others' No. 1 Giddings, C NW Sub. Sec. 12, Wash County R. R. Sur. ..... Rig.
Humble Oil & Refining Co.'s No. 4 A. S. Burleson, Sec. 100, T. C. Jones Sur. ..... Shot 60 quarts at 2,160-84 ft., total depth 2,186 ft., cleaning out.
Humble Oil & Refining Co.'s No. 5 A. S. Burleson, NW NW Sec. 100, T. C. Jones Sur. .. Spudding 125 ft.
Humble Oil & Refining Co.'s No. 1 McElroy, SW SW Sec. 20, Blk. 42, T. & P. Twp. 5-S Sur. ..... Shut down in anhydrite 3,900 ft.
Independent Oil & Gas Co.'s No. 3 A. S. Burleson, Sec. 100, T. C. Jones Sur. ..... 2,200-50 ft., swabbing 25 bbls.
Independent Oil & Gas Co.'s No. 4 A. S. Burleson, Sec. 100, T. C. Jones Sur. ..... Drilling 2,050 ft.
Independent Oil & Gas Co.'s No. 5 A. S. Burleson, Sec. 100, T. C. Jones Sur. ..... Rigging up.
Independent Oil & Gas Co.'s No. 3 Emma Wooley, Blk. 3, G. C. & S. F. Sur. ..... Drilling 2,084 ft., hole full of oil top 2,047 ft.
Independent Oil & Gas Co.'s No. 4 Emma Wooley, Blk. 3, G. C. & S. F. Sur. ..... Drilling 2,060 ft.
Independent Oil & Gas Co.'s No. 5 Emma Wooley, Blk. 3, G. C. & S. F. Sur. ..... Rig.
Independent Oil & Gas Co.'s No. 6 Emma Wooley, Blk. 3, G. C. & S. F. Sur. ..... Building rig.
Independent Oil & Gas Co.'s No. 7 Emma Wooley, Blk. 3, G. C. & S. F. Sur. ..... Building rig.
Independent Oil & Gas Co.'s No. 8 Emma Wooley, Blk. 3, G. C. & S. F. Sur. ..... Rig.
Kirkwood and others' No. 1 Rankin, Sec. 100, T. C. Jones Sur. ..... Will plug, total depth 1,950 ft.
McMan Oil & Gas Co.'s No. 2 M. L. Baker, Sec. 7, E. C. Grooms Sur. ..... Rig.
Marland Oil Co.'s No. 1 Estep, Sec. 18, Blk. 3, M-K-T Sur. ..... Drilling 1,920 ft.
Marland Oil Co.'s No. 2 Estep, Sec. 18, Blk. 3, M-K-T Sur. ..... Top sand 610 ft., drilling 1,790 ft.
Marland Oil Co.'s No. 3 Estep, Sec. 18, Blk. 3, M-K-T Sur. ..... Top sand 610 ft., drilling 1,830 ft.
Marland Oil Co.'s No. 4 Estep, Sec. 18, Blk. 3, M-K-T Sur. ..... Top sand 615 ft., drilling 1,980 ft.
Marland Oil Co.'s No. 5 Estep, Sec. 18, Blk 3, M-K-T Sur. ..... Top sand 550 ft., drilling 1,705 ft.
Marland Oil Co.'s No. 6 Estep, Sec. 18, Blk. 3, M-K-T Sur. ..... Top salt 625 ft., drilling 900 ft.
Marland Oil Co.'s No. 7 Estep, Sec. 18, Blk. 3, M-K-T Sur. ..... Top salt 620 ft., drilling 1,365 ft.
Marland Oil Co.'s No. 8 Estep, Sec. 18, Blk. 3, M-K-T Sur. ..... Rigging up.
Marland Oil Co.'s No. 9 Estep ..... Location.
Marland Oil Co.'s No. 3 Burleson ..... Rigging up at 2,140 ft. to make deep test.
Marland Oil Co.'s No. 1 Shirley, SW SW Sec. 10, Blk. 3½, C. C. S. D. & R. G. N. G. Sur. .. Building rig.
Marland Oil Co.'s No. 1 Powell ..... Building rig.
Marland Oil Co.'s No. 1 Reese ..... Building rig.
Marland Oil Co.'s No. 1 University, C SW Sec. 21, Blk. 4, University Sur. ..... Location.
Marland Oil Co. & Texon's No. 1 Halff, C SE Sec. 62, Blk. Y, C. C. S. D. & R. G. N. G. Sur. ..... Top sand 1,440 ft., drilling 2,250 ft.
Pure Oil Co.'s No. 1 Sherk ..... Location.
Rio Grande Oil Co.'s No. 1 Estep ..... Spudded 50 ft.
Roxana Petroleum Corp.'s No. 2 Hughes, Sec. 4, William Teer Sur. ..... Drilling 305 ft.
Roxana Petroleum Corp.'s No. 3 Hughes, Sec. 4, William Teer Sur. ..... Building rig.
Roxana Petroleum Corp.'s No. 4 Hughes, Sec. 4, William Teer Sur. ..... Building rig.
Roxana Petroleum Corp.'s No. 2 Estep, SE cor. SW Sec. 18, Blk. 3, M-K-T Sur. ..... Drilling 225 ft.
Roxana Petroleum Corp.'s No. 3 Estep, C NE SE SE, Sec. 18, Blk. 3, M-K-T Sur. ..... Drilling 200 ft.
Roxana Petroleum Corp.'s No. 4 Estep ..... Location.
Roxana Petroleum Corp.'s No. 5 Estep ..... Location.
Sartain & Davis' No. 1 Bull, SW NE, Sec. 48, Blk. 41, T. & P. Sur. ..... Shut down 1,660 ft.
Skelly Oil Co.'s No. 1 Jones ..... Underreaming 8-in. at 3,040 ft., total depth 3,155 ft.
The Texas Company's No. 6 R. King, SE SW Sec. 11, Blk. 3½, C. C. S. D. & R. G. N. G. Sur. ..... Spudded 200 ft.
The Texas Company's No. 8 R. King, Sec. 11, Blk. 3½, C. C. S. D. & R. G. N. G. Sur. ..... Shut down for tankage, hole full oil 2,004-2,125 ft.
Texas Pacific Coal & Oil Co.'s No. 3 Sherk, Sec. 5, Blk. 3, M-K-T Sur. ..... Rig.
Texas Pacific Coal & Oil Co.'s No. 4 Sherk, NW SE Sec. 5, Blk. 3, M-K-T Sur. ..... Drilling 1,530 ft.
Texon Oil & Land Co.'s No. 1 Sherk ..... Rig on ground.
Johnston & McCamey & Union Land Co.'s No. 1 Union Land Co., SW cor. Sec. 21, Blk. 1, M-K-T Sur. ..... Location.
Wentz Oil Corp.'s (was Johnson & McCamey) No. 1 Sherk, NW SE Sec. 35, Blk. 1, M-K-T Sur. ..... 2,272-3,331 ft. set 5-in. on bottom with packer and 20-ft. perforated joint, pulled 8-in. and trying to run 6-in. with packer, flowing 85 bbls. oil and 30 bbls. water.

VAL VERDE COUNTY

A. Blume and others' No. 1 Moore estate, Sec. 183, J. Mitchell Sur. ..... Resetting casing 2,675 ft.
Curso Williams' No. 1 Holman, NE NE Sec. 5, Blk. N, G. H. & S. A. Sur. ..... Fishing tools 250 ft.
East Del Rio Oil Co.'s No. 1 Russell, E cor. Sec. 183, Del Rio Town Sur. ..... Drilling 2,970 ft.
Hiawatha Oil Co.'s No. 1 Sellers, C Sec. 1,031, Blk. A, I. & G. N. Sur. ..... Spudded and shut down.
Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I. & G. N. Sur. ..... Shut down 3,712 ft.
O. O. Owens' No. 1 Mills, CE Sec. 128, I. & G. N. Sur. ..... Location.
Plateau Oil Co.'s No. 1 Harrison, Sec. 14, Blk. 3 ..... Drilling 3,250 ft.
Transcontinental Oil Co.'s No. 1 W. S. Stevenson, NE SE NE Sec. 5, Blk. 4, I. & G. N. Sur. ..... Drilling 1,800 ft.

WINKLER COUNTY

Brandon & McCamey's No. 1 Kloh & Rumsey, NE SW SW Sec. 11, Blk. 46, T. & P. T-1-N Sur. ..... Drilling 3,495 ft.
McCullough Oil Co.'s No. 1 Tobe Morton, CEL Sec. 20, Blk. B-12, Pub. Sch. Ld. Sur. ..... Location.
Independent Oil & Gas Co.'s No. 1 Hendricks, SW SE SE Sec. 42, Blk. B-5, Pub. Sch. Ld. Sur. ..... Location.
R. S. Matthews and others' No. 1 State, C Sec. 7, Blk. A-57, Pub. Sch. Ld. Sur. ..... Drilling 560 ft.
F. P. Zoch and others' No. 1 John Sealy, C SW Sec. 73, Blk. A, Pub. Sch. Ld. Sur. ..... Shut down 200 ft.
L. D. Ladd, Hill and others' No. 1 Amburgey, C Sec. 24, Blk. B-7, Pub. Sch. Ld. Sur. ..... Drilling 675 ft.
Sid Richardson's (Taliaferro) No. 1 Sealy, C SW Sec. 28, Blk. A ..... Drilling 3,470 ft.
Llano Oil Co.'s No. 1 Scarborough, C Sec. 1, Blk. C-22, Pub. Sch. Ld. Sur. ..... Location.
Westbrook & Eastland Oil Co.'s No. 1 Hendricks, SE SE Sec. 42, Blk. B-5, Pub. Sch. Ld. Sur. ..... Drilling 2,815 ft. in lime, gas decreased to 200,000 ft., oil decreased to show.
Champlin Drilling Co.'s No. 1 Means, C SW Sec. 21, Blk. C-23, Pub. Sch. Ld. Sur. ..... Location.

JONES COUNTY

Atlantic Oil Prod. Co. and others' No. 1 Howe. . Building rig.
Bateman & Campbell's No. 1 Southard ..... Location.
Gibson & Johnson's No. 1 Mrs. J. V. Wright .. Drilling 1,060 ft.
Gillette & Hickey's No. 1 S. W. King ..... Reaming 8-in. 1,580 ft.
Gillette & Hickey's No. 1 M. E. Young ..... Shut down at 360 ft.
Hurley Oil Co. and others' No. 1 J. Sears ..... Drilling 670 ft.
Marland Oil Co.'s No. 1 S. R. Cox ..... Drilling 2,230 ft., small show of oil 2,015 ft.
Marland Oil Co.'s No. 1 Mason ..... Fishing casing 820 ft.
Midwest Exploration Co.'s No. 1 Thornton .... Fishing casing 1,060 ft.
Victor H. Martin's No. 1 Culbertson ..... Rig.
Muse & Robertson's No. 1 Manly ..... Machine on ground.
Phillips Petroleum Co.'s No. 1 Walling ..... Drilling 1,000 ft.
Shaw & Rathke and others' No. 1 Bristow .... Shut down at 500 ft.
Leigh Taliaferro's No. 1 King ..... Underreaming 6-in. at 1,800 ft., total depth 1,945 ft.
J. C. Yancey and others' No. 1 Herndon ..... Spudded and shut down.
J. C. Yancey and others' No. 1 Powell ..... Spudded and shut down.
Zeigler and others' No. 1 Reeves ..... Rig.
World Oil Co.'s No. 1 .....

WILDCAT OPERATIONS IN PANHANDLE

(Continued from Page 47)

GRAY COUNTY

Archer, Blake and others' No. 1 Turneau, Sec. 111, Blk. 2-B ..... Spudded and shut down.
Bay Shore Oil Co.'s No. 1 C. W. Bradford, Sec. 148, Blk. 2-B ..... Total depth 2,666 ft., drilling water well.
Blackwell & McGee's No. 1 Bowers, Sec. 92, Blk. 2-B ... Drilling 630 ft.
Boone Drlg. Co.'s No. 1 J. S. Mackie, Sec. 115, Blk. 2-B .. Rig.
British-Amer. O. Co.'s No. 1 J. E. Meers, Sec. 107, Blk. 2 .. New location, NE cor. NW NW.
Canyon Oil Co.'s No. 1 Jackson Est., Sec. 60, Blk. 2-B .... Running 8-in. 2,365 ft.
Constantin and others' No. 1 Dial, Sec. 33, Blk. 25 .... Standardizing 2,000 ft.
Cranfill Bros.' No. 1 T. B. Noble, Sec. 10, Blk. 6-A..... Cementing 2,480 ft.
Eagle Creek Oil Co.'s No. 1 J. Hopkins, Sec. 66, Blk. 2-B (Now Riley & Heck.)
H. B. Ellers' No. 1 Crews, Sec. 12, Blk. 25 ..... Spudded and shut down.
Empire G. & F. Co.'s No. 1 B. Hughey, Sec. 129, Blk. 3.. Straightreaming 3,010 ft.
Empire G. & F. Co.'s No. 1 J. J. Wall, Sec. 161, Blk. 3.... Drilling 2,680 ft.
Jack Greenwood and others' No. 1 H. B. Lovett, Sec. 26, Blk. 2-B ..... Drilling 1,300 ft.
Gray Co. Pet. Co.'s No. 1 W. L. Herndon, Sec. 147, Blk. 3 New location, SE cor. NE NW, 330 ft. location.
Gulf Prod. Co.'s No. 1 R. S. McConnell, Sec. 175, Blk. 3... Flowed 7⅝ bbls., granite wash 3,152 ft.
Gulf Prod. Co.'s No. 1 Merten, Sec. 88, Blk. 3 ..... Swabbed 102 bbls. 3,250 ft.
Johnson & Martin's No. 1 Fanny Holloway, Sec. 7, Blk. H. A. W. Wallace Survey, location.
Magdalene Oil Co.'s No. 1 J. E. Williams, Sec. 17, Blk. 1. Spudded and shut down.
Magnolia Pet. Co.'s No. 1 Heithholt, Sec. 152, Blk. 3.... Running 20-in. 450 ft.
Nabob Oil Co.'s No. 1 J. S. Morse, Sec. 68, Blk. 25 ..... Shut down 1,980 ft.
Pampa Oil Co.'s No. 1 W. R. Campbell, Sec. 90, Blk. 3... Drilling 950 ft.
Pampa Oil Co.'s No. 1 Mary Leopold, Sec. 141, Blk. 3.... Rigging up tools.
Phillips Pet. Co.'s No. 1 H. M. Davis, Sec. 86, Blk. 3 .. Drilling 2,250 ft.
Riley & Heck's No. 1 Mrs. Hopkins, Sec. 66, Blk. 2-B .. Moving in rotary tools.
Roxana Pet. Corp.'s No. 1 B. E. Finley, B. E. Chaney .. B. E. Chaney Survey, moving back boiler at 2,700 ft.
Slay et al's (was Henry Riley) No. 1 J. M. White, Sec. 212, Blk. 2-M ..... Drilling 850 ft.
Skelly Oil Co.'s No. 1 A. G. McKay, Sec. 175, Blk. 3 .. Rigging up.
The Texas Company's No. 1 H. M. Barrett, Sec. 131, Blk. 3. New location, C SE of section.
The Texas Company's No. 1 C. W. Saunders, Sec. 81, Blk. 3 ..... Drilling 2,670 ft. in red rock.
The Texas Company's No. 1 Osborne, Sec. 108, Blk. 3... New location, C SE of section.
Travis and others' No. 1 J. Back, Sec. 44, Blk. 25 ..... Rig down.
Upham Gas Co.'s No. 1 W. E. Grammage, Sec. 4, Blk. 25.. Rig.
Weir, Kribs & Finklea's No. 1 B. F. Talley, Sec. 114, Blk. 2-M ..... Spudded and shut down.

HANSFORD COUNTY

F. W. Dillard and others' No. 1 F. A. Davis, Sec. 50, Blk. 2 ..... Spudded and shut down.
Oklavania Oil Co.'s No. 1 Whitson, Sec. 2 ..... Shut down 1,045 ft.

HARTLEY COUNTY

Amerada Pet. Corp.'s No. 1 Frances Farwell, Sec. 27, Block 16 ..... Building rig.
Deep Rock Oil Co.'s No. 1 Lyman & Balfour, Sec. 9, Blk. 2 ..... Shut down 1,710 ft.
Eslick and others' No. 1 J. B. Irving, Sec. 13, Blk. 13.... Shut down 1,500 ft.
W. W. Holmes' No. 1 G. B. Coots, Sec. 58, Blk. XR..... Drilling 1,170 ft.
Humble O. & R. Co.'s No. 1 J. M. Shelton, Sec. 63..... Drilling 2,065 ft.
J. B. McKanna's No. 1 E. S. Collins, Sec. 3, Blk. LS .. Drilling 350 ft.
J. B. McKanna's No. 1 Frances Farwell, Sec. 10, Blk. 22.. Drilling 400 ft.
J. B. McKanna's No. 1 J. M. Shelton Est., Sec. 29, Blk. 202 Shut down 1,990 ft.
Kork Oil Co.'s No. 1 J. M. Shelton Est., Sec. 1, Blk. 8-B .. Spudded and shut down.
Breck Walker's No. 1 Stone, Sec. 35, Blk. ITO ..... Location.

HEMPHILL COUNTY

Andrade and others' No. 1 Humbolt, Sec. 44, Blk. 1..... Location.
A. J. Calhoun's No. 1 J. C. Isaacs, Sec. 189, Blk. C..... New location, rig, 300 ft. S and 2,600 ft. W of NE cor.
Dorning and others' No. 1 Alexander, Poltevent Sur..... Shut down.
Fisher Oil Co.'s No. 1 J. E. George, Sec. 40, Blk. 2-A .... Drilling 2,200 ft.
Hoover and others' No. 1 Schaller Est., Sec. 4 ..... Spudded and shut down.
Hoover and others' No. 1 fee, J. S. Hood Sur. ..... Pulling pipe 2,330 ft.
Mitchell and others' No. 1 J. E. George, Sec. 40, Blk. 2-A. Drilling hard lime at 2,440 ft. (Erroneously reported last week as shut down at 900 ft.)
McCockrel and others' No. 1 Shaller Est., Fanning Sur.. Building rig.

HUTCHINSON COUNTY

Big Creek Oil Co.'s No. 1 Cal Merchant, Sec. 37, Blk. 47 .. Drilling 2,660 ft.
Get Oil Co.'s No. 1 W. P. Allen ..... Rig.
Gibson Oil Corp.'s No. 1 McCormick Est., Sec. 18, Blk. M-23 ..... Shut down 3,200 ft., contract dpth.
Marland Oil Co.'s No. 1 State of Texas, River Bed..... Drilling 2,820 ft.
Lee Flowers' No. 1 Carver, William Heath ..... Shut down 1,200 ft.
Pole Cat Oil Co.'s No. 1 W. B. Halle, Sec. 24, Blk. M-21.. Rig.
Panfield Oil Co.'s No. 1 Luginbyhl Bros., Sec. 50, Blk. M-23 ..... Drilling 725 ft.
Rock Island Oil Co.'s No. 1 W. A. Starnes, Sec. 32, Blk. M-23 ..... Drilling up bailer 470 ft.
Sinclair Oil Co.'s No. 1 Williams, Sec. 43, Blk. 47 ..... Shut down 2,405 ft.
Tex-O Oil Co.'s No. 1 Johnson Bros., Tomlinson ..... Shut down 2,920 ft.
Wentz Oil Corp.'s No. 1 Cal Merchant, Sec. 34, Blk. 47 .. Shut down for 8-in. at 3,757 ft.
Western Dev. Co.'s No. 1 O. W. Jarvis ..... Fishing 3,485 ft.

LIPSCOMB COUNTY

Everett et als' No. 1 Mrs. H. D. May, Sec. 612, Blk. 43 .. Spudding.
McCorkle and others' No. 1 Barton, Sec. 504, Blk. 43 .. Drilling 3,505 ft., to go 4,250 ft.
Snyder et als' No. 1 A. Barton, Sec. 504, Blk. 43 ..... (Now McCorkle and others.)

MOORE COUNTY

Amarillo Oil Co.'s No. 1 Masterson-J, Sec. 59, Blk. O-18 .. Drilling 2,375 ft.
Amarillo Oil Co.'s No. 2 Terry Thompson, Sec. 19, Blk. 44 Drilling 1,500 ft.
Cadman and others' No. 1 J. T. Sneed, Jr., Sec. 68, Blk. 3 Shut down 2,675 ft., 2,000,000 ft. gas 2,520-2,675 ft.
Douglas Oil Co.'s No. 1 H. W. Beauchamp, Sec. 112, Blk. 44 ..... Shut down 700 ft.
Flowers and Marland Oil Co.'s No. 1 J. T. Sneed, Jr., Sec. 25, Blk. 1 ..... Shut down 2,700 ft., 10,000,000 ft. gas.
Humble O. & R. Co.'s No. 1 Kilgore, Sec. 28, Blk. 44 .... Shut down 1,300 ft.
Phillips Pet. Co.'s No. 1 Sneed, N. Jones Sur. ..... Straightreaming 3,095 ft.
Masters Oil Co.'s No. 1 J. T. Sneed, Jr., Sec. 58, Blk. 6-T.. Drilling 850 ft.
Morton & Co.'s No. 1-H Rubert, Sec. 191, Blk. 3-T ..... Shut down 860 ft.
Prairie O. & G. Co.'s No. 2 Sneed, Sec. 26, Blk. 6-T..... Drilling 2,940 ft.
Moore County Oil's No. 1 Sneed, Sec. 20, Blk. 6-T ..... Shut down 1,185 ft.
Shadler Bros.'s No. 1 John Lowery, Sec. 237, Blk. 44.... Shut down 750 ft.
Shamrock Pet. Co.'s No. 1 O. E. Cober, Sec. 16, Blk. M-21 Shut down 750 ft.

OCHILTREE COUNTY

W. G. Burton's No. 1 Stickler, Sec. 579, Blk. 43..... Running 6-in. 3,540 ft.
Hamilton and others' No. 1 R. E. Wamble, Sec. 144, Blk. 43 ..... Shut down 250 ft.
McCorkle Pipe Line Co.'s No. 1 R. H. Moore, Sec. 471, Blk. 43 ..... Drilling 1,590 ft.
McCorkle's No. 1 Weinett, Sec. 674, Blk. 43 ..... New location, rig, C NE section.
Standard Dev. Co.'s No. 1 Bowden, Sec. 932, Blk. 43 .. Shut down 900 ft.

PARMER COUNTY

Humble O. & R. Co.'s No. 1 Farwell et al, Sec. 2, Blk. 3. Location.

POTTER COUNTY

Amarillo Oil Co.'s No. 5 Lee Bivins-A, Sec. 25, Blk. O-18.. Completed 16,000,000 gas 2,650 ft.
Amarillo Oil Co.'s No. 1 Fuqua, Sec. 4 ..... Drilling 1,260 ft.
The California Co.'s No. 1 G. A. Carey, Sec. 6, Blk. Z-6.. Rig.
Gulf Prod. Co.'s No. 1 W. H. Bush, Sec. 89, Blk. 9..... Drilling 3,340 ft., hard lime.
Farmer O. & G. Co.'s No. 1 J. A. Jones, Sec. 3, Blk. 1.... Shut down 150 ft.
Kelly & Harris' No. 1 Bush, Sec. 161, Blk. 9..... Location.
Kelmey Oil Co.'s No. 1 W. H. Bush, Sec. 19, Blk. 9..... Moving in rig, new location, SE cor. section, located 3 miles east of Gulf test.

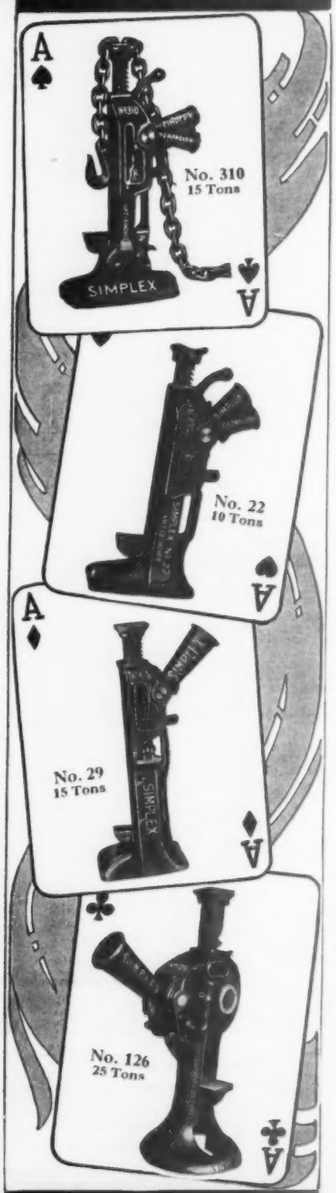
RANDALL COUNTY

Red Hill Corp.'s No. 1 J. M. Redfearn, Sec. 87, Blk. B-5 .. Drilling 400 ft.

ROBERTS COUNTY

Gibson Oil Corp.'s No. 1 T. S. Jones, Sec. 199, Blk. C..... Spudded and shut down.

"4 Jacks" that are "Aces" in every oil field



Templeton, Kenly & Co., Ltd.
Sole Mfrs.
Chicago, Illinois

Simplex Jacks

At Your Supply House

Charles Page and others' No. 1 Hamilton Tract 2, Clay County School Land ..... Drilling 700 ft.
Murphy and others No. 1 A. W. Gill, Sec. 31, Blk. 2-M ..... Abandoned.
Pan-State Oil Co.'s No. 1 A. H. Tandy, Section 179, Blk. 42 ..... Rigging up.
Pettijohn and others' No. 1 J. A. Meade, Sec. 29, Blk. 1-B ..... Laying water line.
Trammel et als' No. 1 A. H. Tandy, School Land Sur. ..... Spudded, shut down.

SHERMAN COUNTY

Eclipse Drilling Co.'s No. 1 Lee Bivins, Sec. 35, Blk. 2 ..... Rigged up.
Get Oil Co.'s No. 1 Bivins, Sec. 35, Blk. 3-B ..... Drilling 475 ft.
Phillips Pet. & Savoy, No. 1 Roach, Sec. 161, Blk. 1-C ..... Shut down 1,650 ft.

SWISHER COUNTY

Keagan & Baker's No. 1 Stallings, Sec. 8, Blk. M-13 ..... New location, C NW of section in H. & O. B. Survey.
Overson & Keagan, No. 1 L. M. Woodward ..... Abandoned 840 ft.

WHEELER COUNTY

American Ref. Co.'s No. 1 E. E. Carlton, Sec. 29, Blk. 13 ..... Location.
Boyles & Johnson's No. 1 S. L. Lewis, Sec. 40, Blk. 24 ..... Rig.
Gibson Oil Corp.'s No. 1 W. E. Bentley, Sec. 42, Blk. 24 ..... Completed 30,000,000 ft. gas 2,160-2,265 ft.
Gibson Oil Corp.'s No. 2 H. C. Phillips, Sec. 41, Blk. 24 ..... Rig.
Gibson Oil Corp.'s No. 4 H. C. Phillips, Sec. 41, Blk. 24 ..... Shut down 1,500 ft.
Hill, Cook & Riley's No. 1 L. H. Webb, Sec. 61, Blk. 24 ..... Drilling 400 ft.
Laycock and others' No. 1 Fee, Sec. 10, Blk. 27 ..... Running 6-inch 1,900 ft.
Magnolia Pet. Co.'s No. 1 E. C. Johnson, Sec. 40, Blk. 24 ..... New location, rig, NE cor. NW of section.
Murchison & Fain's No. 1 Binkley & Cain-A, Sec. 37, Blk. 24 ..... Moving in rotary.
J. J. Rock Co.'s No. 1 T. C. Jones, Sec. 1, Blk. 34 ..... Shut down for casing.
Scott, Allen & Bledsoe's No. 1 J. H. Jackson, Sec. 11, Blk. 27 ..... Drilling 1,650 ft.
Smith and others' No. 1 W. J. Johnson, Sec. 88, Blk. 5-A ..... Rig.
Smith, Brady and others' No. 1 P. J. Sorenson, Sec. 53, Blk. 4-A ..... Drilling 700 ft.
The Texas Company's No. 1 Smith (Lewis), Sec. 40, Blk. 24 ..... Cementing 10-in. 1,647 ft.
Upham Gas Co.'s No. 1 Cody, Sec. 88, Blk. 17 ..... Spudded and shut down.
Upham Gas Co.'s No. 1 Martin, Sec. 89, Blk. 17 ..... Drilling 1,650 ft.
Upham Gas Co.'s No. 1 Alexander, Sec. 92, Blk. 17 ..... Rigging up tools.
Upham Gas Co.'s No. 1 Griswald, Sec. 1, Blk. 24 ..... Rig.
E. L. Woodley, Jr.'s No. 1 Woodley, Sr., Section 13, Blk. 5-A ..... Drilling 1,800 ft.
Vaughn and others' No. 1 O'Gorman, Sec. 83, Blk. 17 ..... Running 8-inch 1,125 ft.
World Oil Co.'s No. 1 Jackson, Sec. 11, Blk. 27 ..... Drilling 755 ft.

Abbreviations—Loc., location; C. O., cleaning out; S. D., shut down; U. R., underreaming; S. R., straight reaming; T. D., total depth; Ft., feet; Sur., survey.

OKLAHOMA REFINED MARKET UNCHANGED

(Continued from Page 36)

strength the remainder of the year it will have to depend more on a decline in production through reduced crude runs rather than on any extended or important buying.

The steadiness of gasolines was indicated in the fact that a third half cent reduction in export postings of 64-66 375 gasoline by the Standard Oil Co. of New Jersey Monday failed to have any greater weakening effect on actual spot markets of gasolines as a whole. This was despite the fact that the reduction placed prices on lower grades in an embarrassing position compared with the price netted on the 64-66 375 contracts, which now is 9.55 cents, Oklahoma.

The U. S. Motor (58 60 437) gasoline is quoted only at 9¾ cents, which is above the contracts for the aviation gasoline, and the 60-62 400 gasoline is being moved only slightly higher at 10½ to 10¾ cents.

Export Cut

That gasoline prices were not affected by the export cut is taken by some market students to mean that the prices can not go much lower on the present crude structure. Despite the cut, refiners still were able Tuesday to get as high as 11 cents for the 64-66 375 material, and 10½ to 10¾ cents on the 60 62 400 gasoline, from domestic buyers. Until the past week, however, there has been a fair demand for these higher gravities from northern jobbers which has kept this market in good shape.

The U. S. Motor gasoline also seemed steady Tuesday at 9¾ cents, although there was plenty of material available at that figure. Efforts of buyers to shade that figure met with failure in most cases. Some 9½-cent material was reported, but this was scattered.

As with north Texas refiners, whose net price now is 9.65 cents, the export reduction will permit Oklahoma refiners holding Standard Oil Co. of New Jersey contracts to cancel, the minimum price of 10 cents having been passed. So far none has been reported as cancelling, but this condition has added to the general uncertainty which exists in the market. If contracts are cancelled, this may place that much extra gasoline on the market unless refiners reduce their operations enough to offset it.

Natural Gasolines

Natural gasolines perhaps were the chief exception to the steady price structure which has existed in the refined market the past week, as all these grades were down from a quarter to a half cent Tuesday from what they were a week ago. The A grades showed a tendency to hold, and sellers were able to hold at 9 cents, but the B and C grades weakened materially through lack of demand, and these grades could be bought from 8¼ to 8¾ cents.

Kerosene and Distillates

Kerosene was not so free during the week as in the previous four weeks, and refiners at least temporarily were in an improved situation and were able to prevent any marked declines in the market. The 41-43 water white material was available in some cases at 6⅞ cents, but the prevailing quotation held at 7 cents. One buyer, however, reported getting 42-44 water white kerosene also at 7 cents.

Distillates experienced a marked slump in demand during the week, with some shading of prices. The warm weather in the northern states has reduced requirements to a minimum, and distributors apparently are well stocked. Distillates, however, still are not being offered in any distress amounts, and as a result price reductions only have been fractional. One buyer reported getting 36 38 straw material as low as 5⅛ and 5¼ cents, while others picked up 38-40 material at 5½ and 5⅝ cents easily if they were not very particular about specifications.

Fuel Oil and Gas Oil

There was very little change in fuel oils or gas oil during the week. Prices on all grades have been steady for several weeks. Warmer weather has prevented any improvement in demand, but desirable material continues fairly tight. Bottom for fuel apparently is at $1.25, and efforts to shade $1.30 on 22-26 fuel for spot shipment have found little success. 24-26 fuel is holding at $1.35 and 26-30 at $1.40.

Cracked gas oil is plentiful, but straight overhead straw material is hard to find. Prices are unchanged.

Lubricating Oils

Lubricating oils continued steady in price during the week. Bright stocks especially were in active demand, and manufacturers were behind on their shipments. Neutral demand has been spotted, but shipments as a whole have been considered good.

CRUDE OIL PRICES

(Continued from Page 151)

ROCKY MOUNTAIN STATES

Ohio Oil Co.—Midwest Refining Co.
(Effective May 17)

Rock Creek (Wyo.)	$2.28
Salt Creek—	
29° to 29.9°	1.73
30° to 30.9°	1.81
31° to 31.9°	1.89
32° to 32.9°	1.97
33° to 33.9°	2.05
34° to 34.9°	2.13
35° to 35.9°	2.21
36° to 36.9°	2.29
37° and above	2.37
Big Muddy	2.25
Mule Creek	1.75
Grass Creek, light	2.40
Grass Creek, heavy	.90
Elk Basin	2.40
Lance Creek	2.40
Rex Lake	1.45
Byron (Feb. 2)	2.25
Osage	2.40
Lost Soldier (Contract)	1.05
Greybull-Torchlight	2.13
Hamilton Dome	1.35
Cat Creek (Mont.)	2.40
Sunburst (Mont.) (Oct. 5)	1.35
Florence (Colo.)	1.80
Artesia	1.95
Hogback (N. Mex.)	2.40

Note: Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective July 8)

Penna Grade Oil in New York Transit Lines (New York)	$3.40
Bradford District Oil in National Transit Lines (Pennsylvania)	3.40
Penna Grade Oil in National Transit Lines (Pa.)	3.30
Penna Grade Oil in Southwest Pa. Lines (West Virginia)	3.30
Penna Grade Oil in Eureka Pipe Line Lines (Pa.)	3.25
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	3.05
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (May 17)	2.40
Corning Grade Oil in Buckeye Pipe Line Lines (Ohio) (May 22)	2.55
Somerset Medium Oil in Cumberland Pipe Line Lines (Kentucky) (May 17)	2.50
Somerset Light Oil in Cumberland Pipe Lines (Kentucky) (May 17)	2.65
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (May 19)	1.25
Gaines (Pennsylvania)	2.95
Keister (Pennsylvania) (Oct. 16.)	2.05

MIDDLE WESTERN STATES

Ohio Oil Co.
(Effective May 17)

Lima	$2.46
Wooster	2.55
Illinois	2.37
Indiana	2.25
Princeton	2.37
Plymouth	1.90
Waterloo	1.35
*Western Kentucky (Sept. 9)	2.10
†Cumberland, Barren and Monroe Counties, Ky. (May 17)	2.05
‡Oil in lines of Stoll Oil Refg. Co. in Oil City, Ky.	2.65
‡Oil in lines of Stoll Refg. Co. in Tinsley Bottom, Tenn.	2.40
§Oil Springs (Canada) (May 18)	2.96
§Petrolia (Canada) (May 18)	2.86

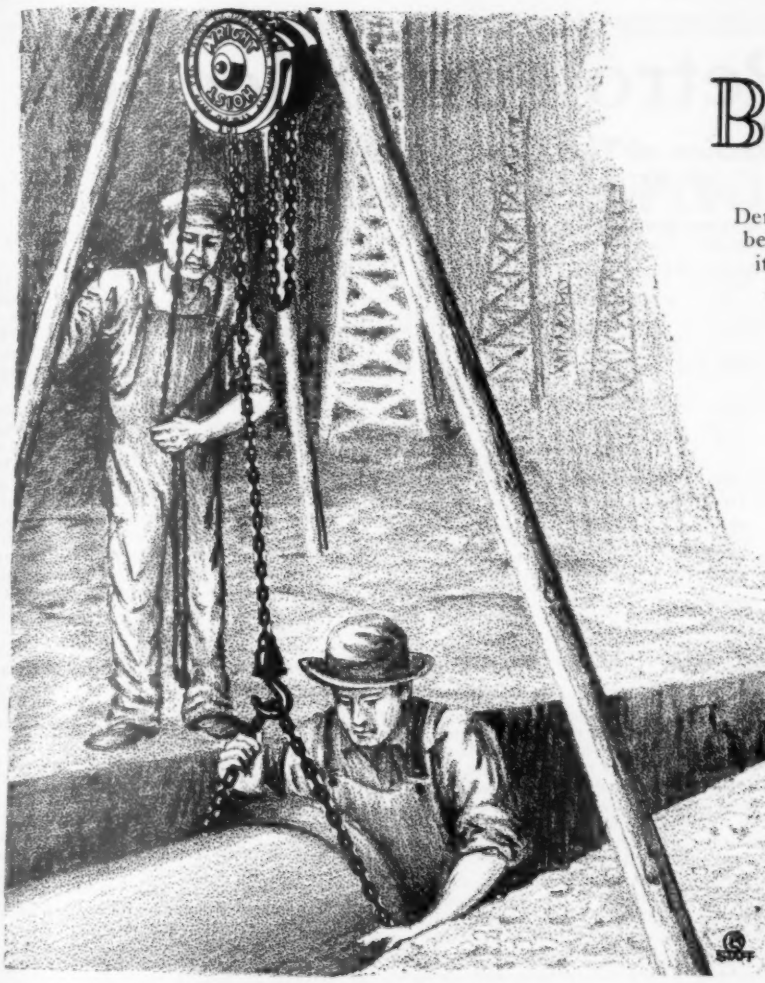
*Posted by Indian Refining Co.
†Posted by Paragon Development Co.
‡Posted by Stoll Oil Refining Co.
§Posted by Imperial Oil Co., Ltd.

MEXICO
(Effective May 13)

*Tuxpam light (f.o.b. Mex. ports)	$1.38
†Panuco heavy (f.o.b. Mex. ports)	1.18
Tuxpam (New York)	2.15
Panuco (New York)	1.90

*Plus 32.328c tax. †17.631c tax.

STEEL PLATE CONSTRUCTION
Steel Oil Storage Tanks, Condensers, Stills, Refinery equipment of every kind, Fabricated and Erected
RITER-CONLEY COMPANY
General Offices—Pittsburgh, Pa.



Beneath the Surface—

Derricks and rigs above ground with not a trace of petroleum below would, to the casual observer, be an oil field, even though it never produced an ounce of oil.

All hoists look alike, or nearly so, from all outward appearances, but appearances cannot give the stamina, speed, and safety demanded of hoists in oil or gas field.

It's what's beneath the surface that counts. Look into a **Wright Improved High Speed Hoist**—see its many points of superiority—note the causes for its greater longevity, higher speed, and ease of operation. Let us enumerate a few of them.

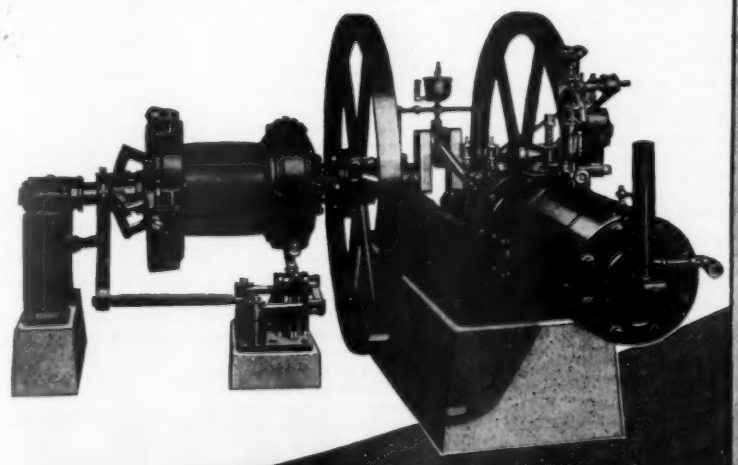
1. *Tube Oiling System*
2. *Ball Bearing Lower Swivel Hook*
3. *Ball Bearing Steel Driving Pinion*
4. *Supplementary Steel Suspension Plates*
5. *New Process Electrically Welded Steel Chain.*

We would like to tell you **all** about it.

The Wright Manufacturing Company
Lisbon, Ohio

WRIGHT HIGH SPEED HOIST

PATTIN REVERSE GEAR ENGINES



For drilling, cleaning out and pumping you can't buy a better Two Cycle Gas Engine than the new Pattin Reverse Gear Engine.

Under working conditions these engines are developing from 30 to 60% above their rated horsepower and are proving themselves highly efficient and economical in every way.

Fitted with the latest fly ball governors and our built in By-Pass Valve that eliminates all extra by-pass valves and piping. All shaft bearings have chain and ring oilers; reverse gears are made of steel; helical gears are bronze bushed—and run in oil.

Let us send you complete information. Bulletin 30 gives all the facts.

PATTIN BROTHERS COMPANY
Marietta, Ohio

Possibilities in Petroleum Alcohols

Better Economic Utilization of This Great Resource by Greater Diversity of High Grade Products

By Harold S. Davis and Wallace J. Murray*
Arthur D. Little, Inc., Cambridge, Mass.

Aliphatic tertiary alcohols are now being manufactured by processes developed in this laboratory, the raw material being the olefins produced in quantity from petroleum by a new type of cracking process. This represents part of a program for a better economic utilization of this great resource by the production of a greater diversity of high-grade products.

The boiling points of tertiary butanol, the lowest member of the series, and of tertiary amylol, the next member, are about the same respectively as of ordinary ethyl alcohol and normal propanol. The tertiary series is as complete as the primary series of alcohols, except that there is no member corresponding to methanol.

These tertiary alcohols differ notably in solvent power from the primary alcohols. For example, they offer unique possibilities for use in recrystalization processes.

Their chemical properties are also unique. They resist oxidation and the action of halogens. Their hydroxyl group is one of the most labile among organic compounds, and this fact makes possible many interesting syntheses.

Their physiological properties have only been slightly investigated; the tertiary group seems to be related to such phenomena as musklike odor, hypnotic effect, and perhaps even vitamin power.

Certain tertiary alcohols occur in nature in essential oils, but only those having 10 or more carbon atoms. Those lower members of the series which are known have all been made by synthetic methods and have been for the most part chemical rarities. Four years ago tertiary butanol was sold by a well-known American firm in small quantities at a rate corresponding to about $475 per gallon.

It is pleasing to state, however, that since early in 1925 these substances have been available at reasonable prices because it has been found that tertiary butanol and many of its homologs can be suitably prepared from petroleum products. The details of this work are not relevant to the present paper. Briefly, however, we are able to change olefins produced in certain types of cracking processes into tertiary alcohols through the intervention of catalysts or via intermediate chlorides.

The liquids of a whole series thus become available to industry. They are similar in many physical properties to ordinary alcohol and its homologs, but their chemical properties, solvent powers, and physiological effects are entirely different.

Physical Properties

The boiling point and density of tertiary butanol are nearly the same as those of secondary propanol (isopropanol) or primary ethanol (ordinary ethyl alcohol), and the rule is somewhat general that these properties of a tertiary alcohol are similar to those of the homologous secondary alcohol with one less carbon atom, or of the primary alcohol with two less carbon atoms. To a certain extent their solubilities in water follow the same rule, but no such similiarity exists regarding the refractive indices or the freezing points of the three types of compounds. Table 1 shows these relationships.

The closeness of the boiling points of the three members of Group 1 is especially striking and indicates the impossibility of separating tertiary butanol, isopropanol, or ethyl alcohol from one another by fractionation.

Table 1—Physical Properties of Lower Aliphatic Alcohols

Group	Alcohol	Boiling point °C.	Density 20°/4° C.	Refractive index at 20° C.	Approx. solubility in water
1	Tertiary butanol	82.55	0.7887	1.38779	Miscible
	Constant boiling mixture (88.24% tertiary butanol, 11.76% water)	79.9			
	Secondary propanol	82.28	0.7887	1.37757	Miscible
	Constant boiling mixture (87.9% secondary propanol, 12.1% water)	80.37			
	Primary ethanol	78.32	0.7894	1.36232	Miscible
2	Tertiary pentantol	101.8	0.8093	1.4052	1 vol. in 8
	Secondary butanol	99.5	0.8078	1.3974 (at 15° C.)	1 vol. in 8
	Primary propanol	97.2	0.8035	1.3854	Miscible
3	Tertiary hexanol (straight chains)	123	0.824		
	Secondary pentanol (straight chains)	115.6–119.5	0.819–0.808	1.4077 1.4043 (at 25° C.)	1 vol. in 6
	Primary butanol (straight chains)	117.7	0.809	1.3993	1 vol. in 11
4	Tertiary hexanol (forked chain)	117.6	0.839		
	Secondary pentantol (forked chain)	112.5	0.833		
	Primary butanol (forked chain)	106.5	0.817		

While ethyl alcohol freezes at —114 degrees Centigrade and isopropanol at —85.6 degrees Centigrade, tertiary butanol freezes at 25.5 degrees Centigrade—that is, a little above room temperature. It forms lustrous needles which we have often obtained at least 6 inches long. This remarkably high freezing point of an alcoholic substance which is probably related to its compact structure should be of considerable utility for special cases.

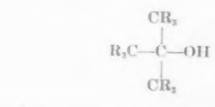
Solvent Properties

The molecular structures of all the tertiary alcohols are more compact than those of the isomeric primary or secondary ones. In consequence their solvent powers are quite different.

The tertiary alcohols should present unique means for purifying certain substances—for example, the hydroxy acids, by recrystallization from hot solutions. For this purpose a solvent is needed in which the substance is not very soluble at ordinary temperatures, but in which its solubility increases as rapidly as possible with the temperature. The potential utility of the tertiary alcohols for this purpose may be illustrated by a comparison of tertiary butanol, ethyl alcohol, and water as solvents for citric acid. It appears that from this point of view tertiary butanol is by far the superior solvent for recrystallizing citric acid.

Chemical Properties

The chemical properties of the tertiary alcohols are entirely different from those of the ordinary alcohols with which industry is familiar. This may be traced back to the fact that every tertiary alcohol contains an hydroxyl group linked to a carbon atom which is also united to three other carbon atoms; thus



Apparently, the valencies of the central carbon are largely saturated by the other three carbon radicals so that the C—(HO) bond is weak. Since this union is weak the O—H bond is abnormally strong. The following unique properties of the tertiary alcohols can be understood with these assumptions.

Ease of Replacement of the Hydroxyl Group

The hydroxyl group of the tertiary alcohols is one of the most labile of all groups in organic compounds. For instance, when tertiary butanol is mixed with concentrated hydrochloric acid it goes over to tertiary butyl chloride, which separates as a top layer in a few minutes. The transformation to chloride is even more rapid in the case of tertiary amylol. This reaction sharply differentiates the tertiary alcohols from the saturated and primary alcohols of the aliphatic series, and in the case of the lower boiling alcohols at least it can be utilized to determine quantitatively the tertiary alcohols in mixtures.

The lability of the hydroxyl group is inherited by the halogen radical which displaces it. Undoubtedly, the tertiary alcohols and their halides offer great possibilities in organic syntheses for introducing hydrocarbon radicals with branched chains into compounds.

Ease of Dehydration—Polymerization

The tertiary alcohols can be dehydrated with great ease. If mild agents such as oxalic acid or even its solutions in water, are used, good yields of the corresponding olefins can be obtained, which contains two radicals linked to an unsaturated carbon atom. For instance, tertiary butanol with oxalic acid gives a good yield of isobutylene. With stronger agents part of the olefin is changed to the di, tri, or higher polymer. Thus, if the alcohol is distilled from sulphuric acid, the relative proportions of the olefin and of its different polymers in the products vary with the quantity and strength of the sulphuric acid and with the conditions of distillation.

Now that the alcohols are available, the exact conditions for getting the maximum yields of the simple olefins and of their different polymers should be worked out. This would give supplies of a large number of higher olefins with branched chains in a comparatively pure state. Tertiary butanol alone will give di-isobutylene (an octylene), tri-isobutylene (containing 12 carbon atoms), etc. Each of the alcohols will give different polymers, and there is also the possibility of making mixed polymers from two alcohols, a field which has been scarcely touched.

As soon as the experimenter can buy or prepare for himself at a moderate cost kilogram quantities of these different olefins, there will be interesting industrial possibilities to test. For instance, it has been claimed that olefins can be particularly useful in synthetic lubricating oils. Their individual antiknock properties in gasoline should also be tested out.

Organic compounds with branched chains often possess peculiar and useful properties. Thus the substitution of the tertiary butyl group in certain nitro derivatives of aromatic compounds produces substances with a strong musklike odor, and artificial musk is actually made in this manner[2].

Another outstanding property of these alcohols is their resistance to oxidizing agents. This is probably due to the fact that oxidation must break the carbon chain, whereas in the case of primary and secondary alcohols the first step in oxidization leaves the chain intact. For instance, primary and secondary alcohols react explosively with chromic amyhydride, yielding aldehydes, ketones, and other products. On the other hand, chromic anyhydride can be added in small lots to a limited quantity of tertiary butanol with complete safety. It rapidly dissolves to give a reddish solution if the excess of tertiary butanol is removed by standing over sulphuric acid in a desiccator, there remains a blackish solid corresponding in weight to a compound of one mol of the alcohol with one of the anhydride. (Care must be taken not to pour tertiary butanol on a large quantity of chromic anyhdride or to heat up large quantities of the solution or of the solid compound, since violent explosions can occur).

This reaction of tertiary alcohols with chromic acid was first noticed by Weinhaus[3], who investigated the behavior of representatives of the aliphatic, aromatic, and hydroaromatic groups. He showed that esters are formed with the chromic acid and developed from this fact a useful method for the detection of tertiary alcohols in their mixtures with either primary or secondary ones:

If a solution of the substances in carbon tetrachloride or petroleum ether develops a pure red color when shaken with aqueous chromic acid and allowed to stand a long time, there is no doubt of its tertiary nature. If the solution rapidly discolors it is, of course, not wholly proven for primary and secondary alcohols always, and tertiary alcohols often undergo oxidation.

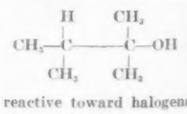
Stability Toward Halogens[4]

The behaviors of the three types of alcohols with halogens may be understood from a consideration of their structure:

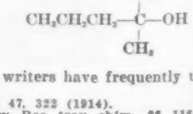
Primary $R.CH_2OH$
Secondary $R_2.CH\ OH$
Tertiary $R_3.C\ OH$

Since the first action of the halogen is to displace a hydrogen attached to a carbon atom, it is evident that the secondary alcohols will be the most reactive, because they contain a labile hydrogen attached to a carbon which is also linked to three groups (other than hydrogen). Next in order come the primary alcohols. But the tertiary alcohols are the most stable because no hydrogen is attached to the carbon of the C—OH group, and substitution can take place only in one of the R radicals.

As regards the separate tertiary alcohols, the one containing only CH_3 groups (tertiary butanol) is the most stable. Next in order come those with CH_2 and with CH radicals, and the lability of the hydrogen in these is also affected by the nature of the attached groups. For instance, the alcohol



is more reactive toward halogens than



The writers have frequently used solu-

*Presented before Division of Petroleum Chemistry of American Chemical Society, Tulsa, Okla., and published in "Industrial and Engineering Chemistry."

[2]Noelting, Chimie & Industrie 6, 719 (1921; Schoetz, "Synthetic Organic Compounds," 123 (1925).

[3]Ber., 47, 322 (1914).

[4]Henry, Rec. trav. chim., 26, 116 (1907).

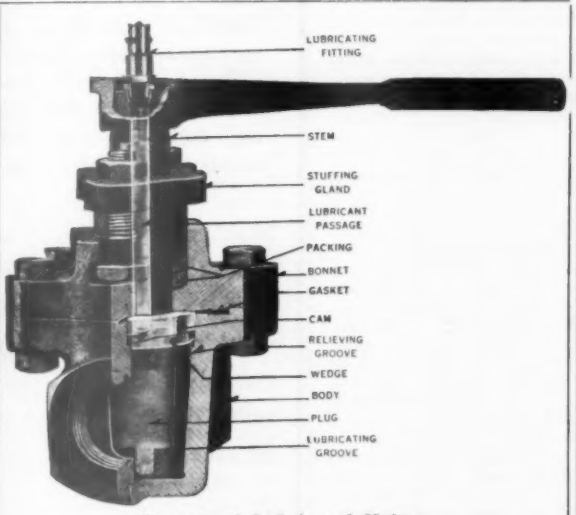
The Cross Cracking Process

CROSS Units in operation and building at this time, have a thruput capacity of over 185,000 barrels daily. REPEAT orders included in this total, amount to over 90,000 barrels daily.

WHY were these REPEAT orders given?

THE M. W. KELLOGG CO.
7 Dey St.
New York City

BRANCH OFFICES:
700 Baltimore Ave., Kansas City, Mo.
1019 Hellman Bank Bldg., Los Angeles, Calif.
444 Market St., San Francisco, Calif.



Homestead Lubricated Valve

We will be exhibitors at the New York Power Show at booth No. 428, from December 1st to December 11th.

LUBRICATED LIKE AN AUTOMOBILE— with the ALEMITE System

Now, the simple, efficient lubricating system which keeps your automobile in top-notch running condition is available in

Homestead Lubricated Valves

Grease guns and other necessary equipment to introduce lubrication, quickly and easily, to the moving parts of HOMESTEAD Lubricated Valves, even under pressure, are supplied as standard.

Investigate the pronounced superiority of these valves for

1. **Soot blower lines.**
2. **Live steam and boiler blow-off lines.**
3. **By-product and natural gas lines.**
4. **Handling corrosive gases and liquids.**

A lubricant for every condition.

Send for illustrated catalog describing uses and operation

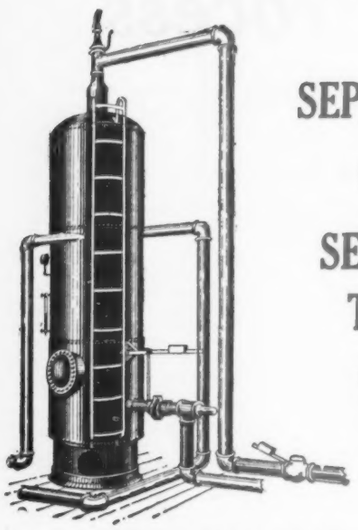
AGENTS: Smith Separator Co., Tulsa, Okla.; Smith-Booth-Usher Co., Los Angeles, Calif.; F. W. Heitman, Houston, Tex.

Homestead Valve Manufacturing Company, Homestead, Pa.

HOMESTEAD

PRODUCTS: Quarter Turn Valves—Straight-Way Three-Way Four-Way Types—Full Round-Way Valves—Cast Steel Refinery Valves—Lubricated Valves—Hovalco Blow-Off Valves—Protected Seat Globe Valves B&O Pat.—Protected-Seat Hydraulic Operating Valves

The TRUMBLE



IS A

SEPARATOR

NOT A

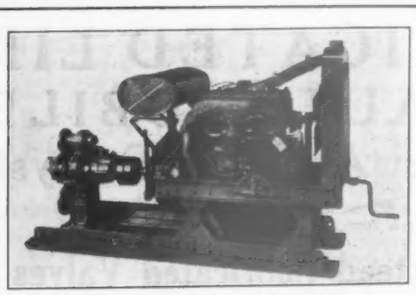
SETTLING

TANK!

Write us for full information.

TRUMBLE GAS TRAP COMPANY
801 Higgins Bldg., Los Angeles, Calif.

Eastern Representative: C. F. CAMP
221-23 E. Archer Tulsa, Oklahoma



Continuous operation—all day, every day—is a quality possessed by machines equipped with Twin Disc clutches. Instead of being a weak link in the chain, the Twin Disc clutch is engineered to outwork and outlast most of the other working parts, and to do this with a minimum of attention.

TWIN DISC CLUTCHES

REPAIR PARTS STATIONS

San Francisco—F. Somers Peterson Co., 57 California St.
Los Angeles—Coast Machinery Corporation, 406 E. Third St.
Chicago—Motive Parts Co. of America, Inc., 2419 Indiana Ave.
Indianapolis—Motive Parts Co. of America, Inc., 531 N. Capitol Ave.
Des Moines—Motive Parts Co. of America, Inc., 1204 W. Grand Ave.
Detroit—Whitney Brothers, 6464 Epworth Blvd.
New York City—R. George & Co., Broome & Wooster Sts.
Raleigh, N. C.—Motor & Equipment Co., 215 E. Davie St.
Cincinnati—Motive Parts Co. of America, Inc., 228 E. Eighth St.
Cleveland—James R. Howell, 6715 Quimby Ave.
Tulsa, Okla.—Buda Engine Service Co. of Tulsa, Inc.

TWIN DISC CLUTCH COMPANY
RACINE WISCONSIN

tions of bromine in tertiary butanol as a laboratory reagent where a water-soluble solvent is desired. They are quite stable even in sunlight, but decompose at 80 to 90 degrees Centigrade.

Tertiary amylol is also comparatively stable to bromine, but the solution rapidly decolorizes at 80 degrees Centigrade.

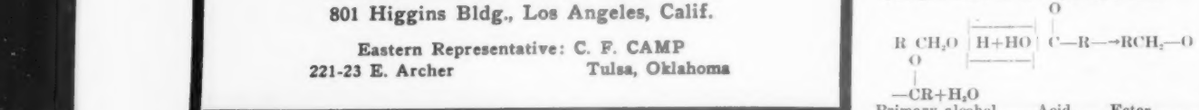
Behavior With Metals

The stability of their O-H bond is strikingly shown by the behavior of the tertiary alcohols with metals and metallic oxides. Metallic sodium reacts only slowly with tertiary butanol, even when they are refluxed together. Barium oxide, too, gives no alcoholate. Accordingly, tertiary butanol may safely be dehydrated by distillation from either of these substances. Tertiary amylol is pretty stable to sodium or barium oxide up to its boiling point, but if the temperature of the liquid, owing to the presence of higher boiling substances, rises much above 102 degrees Centigrade then interaction speeds up and at 125 degrees Centigrade is fairly rapid.

Neither sodium nor barium oxide can be used to dehydrate the hexyl and higher tertiary alcohols on account of the attendant decomposition which sometimes results in resins. These alcohols can, however, be obtained free from water by simple fractionation.

Behavior with Acid Chlorides

Acetyl chloride reacts with tertiary butanol but, in contrast to its behavior with primary and secondary alcohols, yields tertiary butyl chloride and not the acetate. This result again shows the strength of the O-H bond and the lability of the OH group. Norris and his coworkers[5] have shown that, contrary to general belief, esterification of alcohols proceeds by the displacement, not of the hydroxyl group in the alcohols, but of the hydrogen atom in the hydroxyl, thus:



Primary alcohol Acid Ester

They have shown by quantitative measurements that the ease of esterification in a series of alcohols depends upon the looseness of the bond holding the hydrogen to the oxygen. Now since the OH bond is very strong in tertiary butanol, the reaction with acetyl chloride takes another path and the labile OH group itself is displaced, yielding tertiary butyl chloride and acetic acid.

Properties of the Esters

The methods which are ordinarily used to form organic acid esters of the primary alcohols do not yield the tertiary esters from the tertiary alcohols. Tertiary butyl acetate, a typical tertiary ester, is suitably prepared by the action of ketene with tertiary butanol. It is a liquid boiling at 96 degrees Centigrade with a somewhat fruity odor, but leaves a sharp after-effect due probably to the fact that it hydrolyzes in the olefactory organs, liberating acetic acid, for it is readily hydrolyzed even by cold water.

The hypochlorite esters[6] of the tertiary alcohols are of industrial importance. They are readily formed by the action of aqueous hypochlorous acid on the alcohols. Whereas the hypochlorite esters of the primary and secondary alcohols are very unstable and decompose explosively in bright light, the tertiary hypochlorite esters are quite stable. Tertiary butyl hypochlorite, for example, can be distilled without change, and if it is not exposed to bright light may be kept for months at ordinary temperatures with scarcely any decomposition. Like all the tertiary esters, it can be easily hydrolyzed by dilute alkaline solutions regenerating alcohol.

Physiological Effects.

Few investigations have been made of

[5] Private communication.
[6] Chattaway and Backeberg, J. Chem. Soc. (London), 123, 2999 (1923).

The Seeds for the Flowers That Blossomed in June Were Planted in April!

Plan to get your share of the big autumn and winter business by advertising in the Classified Section of The Oil and Gas Journal.

More than 25,000 oil men read it every week in oil fields, refineries, gasoline plants, supply stores, pipeline stations and offices of producers, refiners, marketers, natural gasoline manufacturers and exporters everywhere.

Classified advertising is very reasonable—35 cents a line for the first time and 25 cents a line for each following time. Six words usually make a line.

Mail your ad now so that the thousands of oil men who read next week's issue will be favorably impressed with your offer, product or service.

The Oil and Gas Journal
Tulsa, Okla.

"America's Greatest Petroleum Publication"

"CUT OIL"

is a problem in CHEMISTRY

An "emulsion" represents a condition of a liquid which can be fully, scientifically and economically corrected by use of the chemical process. Use TRET-O-LITE process when you have cut oil and tank bottoms that require treating.

WM. S. BARNICKEL & CO.

St. Louis, Mo.

Tret-O-litE

Reg. U. S. Pat. Off.

ROBINSON

Orifice Fitting

Fitting complete takes the place of all the old "hook-ups." There is a remarkable saving in meter installation. The hazard attending a plate change in the old "hookup" has been entirely eliminated. The facility with which the plate is removed permits and encourages frequent inspection and micrometer checking of the orifice diameter. Oil and sediment can be prevented from stacking on the upstream side of the orifice plate. The gas passage is machined to the diameter used in establishing the coefficient.

Write for descriptive folder.

A. ROBINSON

Manufacturer and distributor
3701 Siskiyou Street
Los Angeles, Calif.
Phone Angelus 7569
Shop Phone Broadway 4820
B. & A. Specialty Co.,
404 W. First St., Tulsa, Okla.

the physiological effects of the aliphatic tertiary alcohols. It is known, however, that tertiary amylol ("amylene hydroxyl") "is a safe rapidly acting and occasionally useful but not analgesic hypnotic."[7]

An extension of our knowledge of the higher tertiary alcohols, including the unsaturated ones, may lead to results vital in its literal sense. Four Japanese worker[8] have recently separated from cod-liver oil and from green foods a material which they regard as a definite compound,[9] with remarkable vitamin powers. It can actually be distilled at 0.02 to 0.03 mm. pressure. When added to the food of the albino rat in the proportion of two parts per million of the ration by weight, it will supply all the "Vitamin A" necessity for normal growth. This substance, which they have named "biosterin," has the empirical formula $S_7H_{12}O_2$. It contains three double bonds and the oxygen atoms are both in hydroxyl groups. One of these is held in the linkage of a primary or secondary alcohol and the other in that of a tertiary alcohol.

A compound of 27 carbon, 44 hydrogen, and 2 oxygen atoms, to contain three double bonds, one primary or secondary alcohol group, and one tertiary alcohol group—these are not specifications insuperable to the organic chemist. We may be on our way to the synthesis of such materials. And just as these workers on one side are endeavoring to learn the chemical structure of the active substances which they can separate from foods, so from the other side our knowledge must be built up about the effect of structure on the physiological properties in an homologous group. And when the two meet who knows but what we will be synthesizing vitamins in ton lots from petroleum?

[7] U. S. Dispensatory, 20th ed.
[8] Takahashi, Nakamiya, Kawakami, and Kitasato, Institute of Physical and Chemical Research, Scientific Papers, **3**, 81 (1925).
[9] Many criticisms of the work of Takahashi and his colleagues are contained in a paper by Drummond, Channon, and Coward, **Biochem. J., 19**, 1097 (1925).

Gravity Observations Of Value in Search For Deposits of Oil

Gravity observations, according to a statement just issued by the Coast and Geodetic Survey, may have some influence in the search for mineral or oil deposits "by indicating where mineral and oil are probably absent, rather than where they may be found." In supplement to the statement, it was stated orally at the office of the Survey that fully 80 per cent of the gravity determinations in this country have been made in the last 15 years. The full text of the statement follows:

The pull of gravity is the attraction of the earth diminished by the centrifugal force due to the earth's rotation. Gravity is greatest at the poles because the centrifugal force is zero and because the distance to the center of the earth is nearly 13½ miles shorter than at the equator. Gravity is also greater at sea level than at an elevated point in the same latitude, because the distance to the center of the earth is less at sea level. The attraction of the earth on another mass diminishes quite rapidly according to a well-known law as the distance between the center of the earth and the center of the mass is increased.

Rocks Said to Affect Gravity

The law of the variation of gravity with latitude has been worked out with great precision by making use of gravity determinations at a large number of stations. By means of this law it is now possible to compute the pull of gravity at any desired location with considerable accuracy. A much better computed value could be obtained, however, if it were known what kind of rocks are concealed in the crust of the earth near the station. Different rocks have different destinies and affects the pull of gravity at a station accordingly.

The difference between the computed and the observed values of gravity gives an indication of the density of the rock

The Regular Style NECO Pump

The Pump That

Scattered Skepticism

NECO

Regular Style Working Barrel Pumps were a novelty less than five years ago. The early skepticism that greeted them has long since vanished.

Today they are still a novelty in their exclusive design but thousands of them have won their right to recognition throughout all oil producing territory.

It is their novelty that allowed many producing companies to prove their worth to the extent of using them today as their standard pump.

This same novelty will convince you also that the radically different features of this pump's operation are worthy of standardization for your wells.

Write for details.

Northrup Equipment Company
Parkersburg, West Virginia

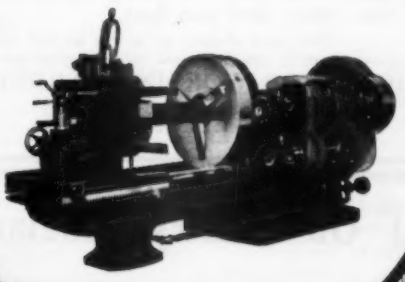
Oil Well Supply Company stocks the complete line of

Fort Worth, Tex. F. J. Ackman Representative

NECO

Nowata, Okla. H. T. Torner Representative

Pumping Equipment



STANDARD

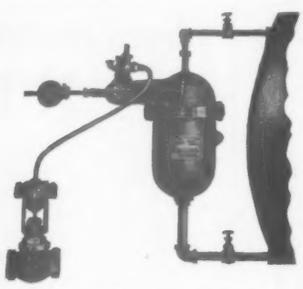
STRONG, dependable,—with a record of many years of successful and satisfactory service in machine shops—large and small—throughout the country. Investigate the Standard Wieland if you want the best in Pipe Threading Machinery.

A descriptive bulletin will be mailed on request.

STANDARD ENGINEERING COMPANY
ELLWOOD CITY, PENNA.

The Vigilant Oil Level Regulator

for any type of absorber or steam still.



In the process of manufacture of gasoline by absorbing the gasoline in oil and subsequently separating the gasoline from the oil by distillation, it is essential that a constant oil level in both the absorbing tank and the still be maintained.

For this purpose the Vigilant Oil Level Regulator is manufactured. It is adaptable to any type of absorber or steam still and will maintain a constant oil level under all conditions of temperature and pressure.

For 35 years Chaplin-Fulton equipment has been recognized for accuracy and reliability.

CHAPLIN-FULTON MFG. CO.
28-36 Penn Avenue, Pittsburgh, Pa.

McGREGOR

"The Working Barrel That Works"

Over fifty-five thousand now in use from Pennsylvania to Argentine and from Oklahoma to India wherever oil is produced.

No Barrel can compete with the McGregor in price. It comes with the barrels, valves, valve stem all complete at a price slightly more than what the old style Barrel would cost. Pumps as fast as regular barrels that are attached to the tubing.

The only pulling done when you have a McGregor in use is the rods as the complete Barrel is fastened to the rods and comes out when they are pulled. TUBING PULLING is done away with as far as the Working Barrel is concerned. Use "Mac" Ball and Seat.

See your dealer or write us for circular

In ordering parts refer to these letters

McGREGOR WORKING BARREL CO., Inc.
Sole Manufacturers
BRADFORD, PENNA.

"Central" Oil Country Tubular Goods

We have a complete stock of Line Pipe, in sizes 8" and smaller, and all the popular sizes of Oil Country Tubular Goods, 8¼" and smaller.

This means that we can ship immediately and keep our distributors in position to do likewise.

Central Tube Company

General Offices: First National Bank Bldg
PITTSBURGH, PA.

Representatives in the Oil Fields

Mid-Continent: Allen, Sproull & Allen, Burk Burnett Bldg., Fort Worth, Texas
California: E. C. Saul, Monadnock Bldg., San Francisco, California

DISTRIBUTORS

Taubman Supply Corporation, Tulsa, Oklahoma, and branches
Dunigan Tool & Supply Co., Breckenridge, Texas, and branches
Putnam Supply Company, Putnam, Texas, and branches
Louisiana Iron & Supply Co., Shreveport, La., and branches
Petroleum Equipment Co., Los Angeles, California, and branches

formation underlying a gravity station. If several stations are located within a few miles of each other, some idea may be obtained of the location and extent of the rock or other material of abnormal density concealed in the earth. There is a possibility that gravity observations may have some influence in the search for mineral or oil deposits. This may be by indicating where mineral and oil are probably absent, rather than where they may be found.

Before triangulation surveys can be made and computed the shape and size of the earth must be accurately determined. Astronomic observations are used in obtaining the size of the earth, but its shape is most accurately obtained from gravity results. Gravity results are also used in the determination of many physical constants, such as the mechanical equivalent of heat and for other scientific purposes.

Swing of Pendulum Timed.

The pendulum is by far the most accurate instrument for determining gravity on land. It is swung in an airtight receiver from which the air is nearly all exhausted. There is no clock mechanism to drive the pendulum or count the oscillations. After the pendulum has been started to swing its momentum will keep it going for 12 hours or more, as there is almost no friction to stop it.

The average time of one oscillation is determined within one-millionth of a second, and when this is compared with the time of one oscillation of the same pendulum under the same conditions at Washington, D. C., where the force of gravity is known, the value of gravity at the new station is obtained.

Great care must be used in making the observations to insure the desired accuracy. A few years ago it was necessary to swing the pendulums in a constant temperature room to prevent errors arising from fluctuating temperatures. Just recently new pendulums have been constructed of a nickel-iron alloy called invar, which has a very small temperature coefficient. With these new pendulums a tent will usually be sufficient protection against temperature variations, as the pendulums are only about one-fifteenth as sensitive in this respect as the old bronze pendulums.

The rates of the chronometers which are used in obtaining the average time of one oscillation of the pendulum must be determined very accurately. A new wireless recording device has recently been perfected by Dr. E. A. Eckhardt, formerly of the Bureau of Standards, by means of which the time signals of the Naval Observatory sent out through Annapolis radio station may be recorded on a chronograph at the gravity station. The rates of the chronometers are thus determined with great accuracy without the necessity of making local time observations on the stars, as was the practice a few years ago.

Greatest Increase In Future Demand From the Far East

By Charles E. Kern
Washington Bureau,
The Oil and Gas Journal

WASHINGTON, D. C., Oct. 16.—A study of the statistics of imports of petroleum and its products into China, Japan, the Philippine Islands, India, British Malaya, Australia, New Zealand and the Dutch East Indies, showing countries of origin, indicates how important to this industry are China and Japan.

In no part of the world is there a greater probable increase to be expected in future demands for petroleum and its products than in these countries of the Far East. This demand is looked upon as sure to keep pace with industrial developments in that part of the world. So it is that the United

Write for free cat.

ARMSTRONG BROS. CHAIN PIPE VISE
DROP FORGED STEEL
The Ideal Portable Vise
RAPID, STRONG, COMPACT
One turn of handle releases or grips pipe.

ARMSTRONG BROS. TOOL CO.
893 No. Francisco Ave., Chicago, U.S.A.

It Will Pay You

to keep
in close touch
with every activity
of the
Petroleum Industry
by reading

The OIL and GAS JOURNAL
every week

DIVIDEND NOTICE
Imperial Royalties Company

Will pay monthly dividend of 1¼% to Preferred Shareholders on October 30. This is Dividend No. 73, and makes a total of 130% paid to shareholders.

E. S. HORN,
H. O. BLAND,
J. E. HORN, Trustees.
333 Mayo Building, Tulsa, Okla.

OIL MAPS
Texas and Oklahoma
PANHANDLE
And Eastern New Mexico
ENGINEERING
AMARILLO ABSTRACT CO.
106 W. Fifth St. Amarillo, Texas

OIL FIELD PHOTOS
Mid-Continent Field
Motion Pictures, Panoramas or Stills
Write for Quotations
CAMERA CRAFT STUDIOS
Box 636 Fort Worth, Texas

Original Eotvos Torsion Balances
Sold or Rented.
GEORGE STEINER
Cotton Exchange Building,
HOUSTON, TEXAS

ARTHUR C. BROWN
SOLICITOR OF UNITED STATES AND FOREIGN PATENTS
406-412 KENNEDY BLDG.,
Tulsa, Okla.
Mr. Ferd Krueger
in Charge
Phone 4.2310

E. J. LONGYEAR CO.
MINING ENGINEERS AND GEOLOGISTS
Diamond Core Drill Manufacturers
Diamond Drilling Contractors
MINNEAPOLIS, MINN.

H. H. MESSIMER
Tank Gauging Engineer
MACHINE MADE TANK TABLES
ABSOLUTE ACCURACY
P. O. Box 257 104 Mid-Co Bldg.
Phone 2-4909—Tulsa, Okla.

F. B. Porter, B. S., Ch. E., President
R. H. Fash, B. S., Vice President
THE FORT WORTH LABORATORIES
Field gas testing. Analyses of oil field brines, gas, minerals and oil
828½ Monroe St., Fort Worth, Texas

G. W. EARNSHAW
LAWYER AND SOLICITOR
U. S. and Foreign Patents
Phone 2-6479
TULSA, OKLAHOMA
107 Tuloma Building

Appraisals Investigations
SAMUEL J. CAUDILL
PETROLEUM ENGINEERS
TAX COUNSELLORS
Tulsa Los Angeles
1014 Atlas Bldg. 433 Security Bldg

TEXAS OIL MAPS
County and District
Catalog on Application
HEYDRICK MAPPING COMPANY
Wichita Falls, Texas

PATENTS
Write for free book
MUNN & CO.
Associated since 1846 with the Scientific American
1551 Scientific American Building, New York City
514 Scientific American Bldg., Washington, D. C.
1263 Tower Building, Chicago, Ill.
416 Hobart Building, San Francisco, Cal.
511 Van Nuys Building, Los Angeles, Cal.

W. L. GOMORY
CHEMICAL ENGINEER
Consulting Petroleum Technologist
INVENTOR GOMORY CRACKING PROCESS
Licenses Solicited
Refinery Design
Peoples Gas Building Chicago

Northern Oil Information Bureau
Shelby, Montana
Complete weekly drilling and operating report of Kevin-Sunburst field mailed to any address, $10 for four reports. Maps and logs for sale. Best of references.
We maintain geological, land and field departments, all in expert hands.

States has a very material interest in the peaceful progress of these countries of the Orient.

Kerosene from United States

It is interesting to note that of 223,207,104 gallons of kerosene imported into China, 177,342,689 came from the United States.

In the case of Japan, of the 27,187,281 gallons of kerosene imported, 18,818,013 had their origin in the United States. In the case of other petroleum, benzine, etc., of the 22,517,603 gallons imported into Japan, 14,853,671 gallons were from the Dutch East Indies, and the balance came from the United States.

Even in the case of India, a natural market for products from Persia, Borneo, Straits Settlement, Russia, Georgia and Sumatra, the United States is chiefly depended upon for these supplies. Of the 70,345,064 gallons of kerosene imported into India, 45,485,437 gallons came from the United States, and of the 11,739,728 gallons of lubricating oil (batching oils), the United States furnished 7,138,044 gallons. Of other lubricating oils, the United States furnished 1,005,808 gallons.

Australia received, during the fiscal year ended June 30, 1925, 24,919,890 gallons of kerosene and other refined burning oils, of which the United States furnished 17,058,370 gallons. Nearly all of the lubricating mineral oils imported into Australia came from the United States, the total being 9,413,081 gallons, of which the United States furnished 9,273,877 gallons. It is of interest to note that Australia imported 41,832,780 gallons of crude petroleum, most of which came from the Netherlands East Indies and the balance from Persia.

Gasoline and spirits were imported by Australia to the extent of 89,750,852 gallons, of which the Netherlands East Indies furnished 42,502,993 gallons and the United States 47,244,503 gallons.

Dutch East Indies

It seems quite remarkable that in the case of the Dutch East Indies, during the calendar year 1924, 38,937,708 liters of kerosene were imported, 35,988,482 liters of which came from the United States. Of the 8,499 metric tons of lubricating oil imported into the Dutch East Indies in that year, 7,378 metric tons came from the United States. The Dutch East Indies received 1,154,118 liters of crude petroleum by importation that year.

Nearly all of the petroleum imported into New Zealand during the fiscal year ended June 30, 1925, came from the United States, and the statistics show that in the case of gasoline every gallon imported was from this country.

The importation of petroleum and its products into the Philippine Islands were very large during the fiscal year ending June 30, 1924. One of the features of this trade consists of the fact that 268,134,548 liters of crude oil were imported into the Philippines, of which 178,511,710 came from the United States and the balance from the nearby source of supply in the Dutch East Indies. In the case of gasoline, kerosene and lubricating oil, the United States had as large or larger percentage of the trade as in the case of crude, the balance coming from the Dutch East Indies.

In British Malaya, for the fiscal year ending June 30, 1925, the United States does not figure prominently in the kerosene and liquid fuel trade. But in the case of lubricating oils, of the 6,224,743 gallons the United States furnished 1,249,932 gallons; whereas, of the 225,832 tons of motor spirit, the United States furnished 77,000 tons.

Imports during 1925 by countries of origin:

JAPAN

(Exchange value yen in 1925, $0.4104)

	Quantity, gallons	Value in yen
Petroleum, benzine, oil, total	22,517,603	17,525,147
From Dutch East Indies	14,853,671	11,945,157
From United States	7,663,906	5,579,844
Kerosene oil, total	27,187,281	13,289,662
Dutch East Indies	7,541,407	3,020,027
United States	18,818,013	9,855,666

NEW ZEALAND

(Average exchange value pound in 1925, $4.829)

		Value in pounds
Crude residual	21,665,380	278,575
Australia	16,282	784

STEEL
for Immediate Shipment from Stock
Bars, Plates, Rivets, Tool Steel, Shapes, Sheets, Bolts, Welding Rods, Structurals, Tubes, Wire, Concrete Reinforcing, Rails, Pipe, Turnbuckles, Small Tools, Machine Tools, Etc.
Write for Ryerson Journal and Stock List
JOSEPH T. RYERSON & SON INC.
CHICAGO ST. LOUIS CINCINNATI
TULSA OFFICE—418 ATLAS LIFE BLDG.
Houston—D. S. MAIR, 220 Main Street
DETROIT BUFFALO NEW YORK

Safety and Service
BROWNELL HI-PRESSURE BOILERS

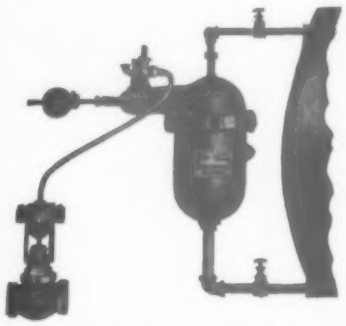
70 Years Successful Manufacturing Experience
Send For Bulletin B-7
Brownell A. S. M. E. Code Oil Country Boiler
THE BROWNELL CO., Dayton, Ohio, U. S. A.
Domestic Distributors: Dunigan Tool & Supply Co., Inc., Breckenridge, Tex.
Established 1855
Export Division: Oil Field Machinery Co., 90 West St., New York, N. Y.

Lowest Cost First and Last
Ajax Bull Ropes
"Strength in Every Length"
AJAX ROPE COMPANY, INC.
SINGER BUILDING ANNEX
90-97 LIBERTY STREET
NEW YORK
Sales Representatives:
Charles H. Moore, Hotel Alexander, Tulsa
C. H. Brown, 405 Holmes Building, Fort Worth, Tex.
Warehouse Representative:
H. D. Hedrick, Tulsa Storage & Transfer Co.

A FIVE-LINE Classified Ad (30 words) can be inserted in The Oil and Gas Journal four times for $5.50—a small cost to acquaint 25,000 readers with your product or service.

The Vigilant Oil Level Regulator

for any type of absorber or steam still.



In the process of manufacture of gasoline by absorbing the gasoline in oil and subsequently separating the gasoline from the oil by distillation, it is essential that a constant oil level in both the absorbing tank and the still be maintained.

For this purpose the Vigilant Oil Level Regulator is manufactured. It is adaptable to any type of absorber or steam still and will maintain a constant oil level under all conditions of temperature and pressure.

For 35 years Chaplin-Fulton equipment has been recognized for accuracy and reliability.

CHAPLIN-FULTON MFG. CO.
28-36 Penn Avenue, Pittsburgh, Pa.

Write for free cat.

ARMSTRONG BROS.
CHAIN PIPE VISE
DROP FORGED STEEL
The Ideal Portable Vise
RAPID, STRONG, COMPACT
One turn of handle releases or grips pipe.

ARMSTRONG BROS. TOOL CO.
830 No. Francisco Ave., Chicago, U.S.A.

McGREGOR

"The Working Barrel That Works"

Over fifty-five thousand now in use from Pennsylvania to Argentine and from Oklahoma to India wherever oil is produced.

No Barrel can compete with the McGregor in price. It comes with the barrels, valves, valve stem all complete at a price slightly more than what the old style Barrel would cost. Pumps as fast as regular barrels that are attached to the tubing.

The only pulling done when you have a McGregor in use is the rods as the complete Barrel is fastened to the rods and comes out when they are pulled. TUBING PULLING is done away with as far as the Working Barrel is concerned. Use "Mac" Ball and Seat.

See your dealer or write us for circular
In ordering parts refer to these letters

McGREGOR WORKING BARREL CO., Inc.
Sole Manufacturers
BRADFORD, PENNA.

"Central" Oil Country Tubular Goods

We have a complete stock of Line Pipe, in sizes 8" and smaller, and all the popular sizes of Oil Country Tubular Goods, 8¼" and smaller.

This means that we can ship immediately and keep our distributors in position to do likewise.

Central Tube Company

General Offices: First National Bank Bldg
PITTSBURGH, PA.

Representatives in the Oil Fields

Mid-Continent: Allen, Sproull & Allen, Burk Burnett Bldg., Fort Worth, Texas
California: E. C. Saul, Monadnock Bldg., San Francisco, California

DISTRIBUTORS

Taubman Supply Corporation, Tulsa, Oklahoma, and branches
Dunigan Tool & Supply Co., Breckenridge, Texas, and branches
Putnam Supply Company, Putnam, Texas, and branches
Louisiana Iron & Supply Co., Shreveport, La., and branches
Petroleum Equipment Co., Los Angeles, California, and branches

formation underlying a gravity station. If several stations are located within a few miles of each other, some idea may be obtained of the location and extent of the rock or other material of abnormal density concealed in the earth. There is a possibility that gravity observations may have some influence in the search for mineral or oil deposits. This may be by indicating where mineral and oil are probably absent, rather than where they may be found.

Before triangulation surveys can be made and computed the shape and size of the earth must be accurately determined. Astronomic observations are used in obtaining the size of the earth, but its shape is most accurately obtained from gravity results. Gravity results are also used in the determination of many physical constants, such as the mechanical equivalent of heat and for other scientific purposes.

Swing of Pendulum Timed.

The pendulum is by far the most accurate instrument for determining gravity on land. It is swung in an airtight receiver from which the air is nearly all exhausted. There is no clock mechanism to drive the pendulum or count the oscillations. After the pendulum has been started to swing its momentum will keep it going for 12 hours or more, as there is almost no friction to stop it.

The average time of one oscillation is determined within one-millionth of a second, and when this is compared with the time of one oscillation of the same pendulum under the same conditions at Washington, D. C., where the force of gravity is known, the value of gravity at the new station is obtained.

Great care must be used in making the observations to insure the desired accuracy. A few years ago it was necessary to swing the pendulums in a constant temperature room to prevent errors arising from fluctuating temperatures. Just recently new pendulums have been constructed of a nickel-iron alloy called invar, which has a very small temperature coefficient. With these new pendulums a tent will usually be sufficient protection against temperature variations, as the pendulums are only about one-fifteenth as sensitive in this respect as the old bronze pendulums.

The rates of the chronometers which are used in obtaining the average time of one oscillation of the pendulum must be determined very accurately. A new wireless recording device has recently been perfected by Dr. E. A. Eckhardt, formerly of the Bureau of Standards, by means of which the time signals of the Naval Observatory sent out through Annapolis radio station may be recorded on a chronograph at the gravity station. The rates of the chronometers are thus determined with great accuracy without the necessity of making local time observations on the stars, as was the practice a few years ago.

Greatest Increase In Future Demand From the Far East

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Oct. 16.—A study of the statistics of imports of petroleum and its products into China, Japan, the Philippine Islands, India, British Malaya, Australia, New Zealand and the Dutch East Indies, showing countries of origin, indicates how important to this industry are China and Japan.

In no part of the world is there a greater probable increase to be expected in future demands for petroleum and its products than in these countries of the Far East. This demand is looked upon as sure to keep pace with industrial developments in that part of the world. So it is that the United

It Will Pay You

to keep
in close touch
with every activity
of the
Petroleum Industry
by reading

The OIL and GAS JOURNAL
every week

DIVIDEND NOTICE
Imperial Royalties Company

Will pay monthly dividend of 1½% to Preferred Shareholders on October 30. This is Dividend No. 73, and makes a total of 130% paid to shareholders.

E. S. HORN,
H. O. BLAND,
J. E. HORN, Trustees.
333 Mayo Building, Tulsa, Okla.

OIL MAPS
Texas and Oklahoma
PANHANDLE
And Eastern New Mexico
ENGINEERING
AMARILLO ABSTRACT CO.
108 W. Fifth St. Amarillo, Texas

OIL FIELD PHOTOS
Mid-Continent Field
Motion Pictures, Panoramas or Stills
Write for Quotations
CAMERA CRAFT STUDIOS
Box 636 Fort Worth, Texas

Original Eotvos Torsion Balances
Sold or Rented.
GEORGE STEINER
Cotton Exchange Building.
HOUSTON, TEXAS

ARTHUR C. BROWN
SOLICITOR OF UNITED STATES AND FOREIGN PATENTS
406-412 KENNEDY BLDG., Tulsa, Okla.
Mr. Ferd Krueger in Charge
Phone 4-2319

E. J. LONGYEAR CO.
MINING ENGINEERS AND GEOLOGISTS
Diamond Core Drill Manufacturers
Diamond Drilling Contractors
MINNEAPOLIS, MINN.

H. H. MESSIMER
Tank Gauging Engineer
MACHINE MADE TANK TABLES
ABSOLUTE ACCURACY
P. O. Box 257 104 Mid-Co Bldg.
Phone 2-4909—Tulsa, Okla.

F. B. Porter, B. S., Ch. E., President
R. H. Fash, B. S., Vice President
THE FORT WORTH LABORATORIES
Field gas testing. Analyses of oil field brines, gas, minerals and oil
828½ Monroe St., Fort Worth, Texas

G. W. EARNSHAW
LAWYER AND SOLICITOR
U. S. and Foreign Patents
Phone 2-6479
TULSA, OKLAHOMA
107 Tuloma Building

Appraisals Investigations
SAMUEL J. CAUDILL
PETROLEUM ENGINEERS
TAX COUNSELLORS
Tulsa Los Angeles
1014 Atlas Bldg. 433 Security Bldg

TEXAS OIL MAPS
County and District
Catalog on Application
HEYDRICK MAPPING COMPANY
Wichita Falls, Texas

PATENTS
Write for free book
MUNN & CO.
Associated since 1846 with the Scientific American
1551 Scientific American Bldg., New York City
514 Scientific American Bldg., Washington, D. C.
1303 Tower Building, Chicago, Ill.
456 Hobart Building, San Francisco, Cal.
511 Van Nuys Building, Los Angeles, Cal.

W. L. GOMORY
CHEMICAL ENGINEER
Consulting Petroleum Technologist
INVENTOR GOMORY CRACKING PROCESS
Licenses Solicited
Refinery Design
Peoples Gas Building Chicago

Northern Oil Information Bureau
Shelby, Montana
Complete weekly drilling and operating report of Kevin-Sunburst field mailed to any address, $10 for four reports. Maps and logs for sale. Best of references.
We maintain geological, land and field departments, all in expert hands.

States has a very material interest in the peaceful progress of these countries of the Orient.

Kerosene from United States

It is interesting to note that of 223,207,104 gallons of kerosene imported into China, 177,342,689 came from the United States.

In the case of Japan, of the 27,187,281 gallons of kerosene imported, 18,818,013 had their origin in the United States. In the case of other petroleum, benzine, etc., of the 22,517,603 gallons imported into Japan, 14,853,671 gallons were from the Dutch East Indies, and the balance came from the United States.

Even in the case of India, a natural market for products from Persia, Borneo, Straits Settlement, Russia, Georgia and Sumatra, the United States is chiefly depended upon for these supplies. Of the 70,345,064 gallons of kerosene imported into India, 45,485,437 gallons came from the United States, and of the 11,739,728 gallons of lubricating oil (batching oils), the United States furnished 7,138,044 gallons. Of other lubricating oils, the United States furnished 1,005,808 gallons.

Australia received, during the fiscal year ended June 30, 1925, 24,919,890 gallons of kerosene and other refined burning oils, of which the United States furnished 17,058,370 gallons. Nearly all of the lubricating mineral oils imported into Australia came from the United States, the total being 9,413,081 gallons, of which the United States furnished 9,273,877 gallons. It is of interest to note that Australia imported 41,832,780 gallons of crude petroleum, most of which came from the Netherlands East Indies and the balance from Persia.

Gasoline and spirits were imported by Australia to the extent of 89,750,852 gallons, of which the Netherlands East Indies furnished 42,502,993 gallons and the United States 47,244,503 gallons.

Dutch East Indies

It seems quite remarkable that in the case of the Dutch East Indies, during the calendar year 1924, 38,937,708 liters of kerosene were imported, 35,988,482 liters of which came from the United States. Of the 8,499 metric tons of lubricating oil imported into the Dutch East Indies in that year, 7,378 metric tons came from the United States. The Dutch East Indies received 1,154,118 liters of crude petroleum by importation that year.

Nearly all of the petroleum imported into New Zealand during the fiscal year ended June 30, 1925, came from the United States, and the statistics show that in the case of gasoline every gallon imported was from this country.

The importation of petroleum and its products into the Philippine Islands were very large during the fiscal year ending June 30, 1924. One of the features of this trade consists of the fact that 268,134,548 liters of crude oil were imported into the Philippines, of which 178,511,710 came from the United States and the balance from the nearby source of supply in the Dutch East Indies. In the case of gasoline, kerosene and lubricating oil, the United States had as large or larger percentage of the trade as in the case of crude, the balance coming from the Dutch East Indies.

In British Malaya, for the fiscal year ending June 30, 1925, the United States does not figure prominently in the kerosene and liquid fuel trade. But in the case of lubricating oils, of the 6,224,743 gallons the United States furnished 1,249,932 gallons; whereas, of the 225,832 tons of motor spirit, the United States furnished 77,000 tons.

Imports during 1925 by countries of origin:

JAPAN
(Exchange value yen in 1925, $0.4104)

	Quantity, gallons	Value in yen
Petroleum, benzine, oil, total	22,517,603	17,525,147
From Dutch East Indies	14,853,671	11,945,157
From United States	7,663,906	5,579,844
Kerosene oil, total	27,187,281	13,289,662
Dutch East Indies	7,541,407	3,020,027
United States	18,818,013	9,855,666

NEW ZEALAND
(Average exchange value pound in 1925, $4.829)

		Value in pounds
Crude residual	21,665,280	278,575
Australia	16,282	784

STEEL
for Immediate Shipment from Stock
Bars, Plates, Rivets, Tool Steel, Shapes, Sheets, Bolts, Welding Rods, Structurals, Tubes, Wire, Concrete Reinforcing, Rails, Pipe, Turnbuckles, Small Tools, Machine Tools, Etc.
Write for Ryerson Journal and Stock List
JOSEPH T. RYERSON & SON INC.
CHICAGO ST. LOUIS CINCINNATI DETROIT BUFFALO NEW YORK
TULSA OFFICE—418 ATLAS LIFE BLDG.
Houston—D. S. MAIR, 220 Main Street

Safety and Service
BROWNELL HI-PRESSURE BOILERS

Brownell A. S. M. E. Code Oil Country Boiler
70 Years Successful Manufacturing Experience
Send For Bulletin B-7
THE BROWNELL CO., Dayton, Ohio, U. S. A.
Domestic Distributors: Dunigan Tool & Supply Co., Inc., Breckenridge, Tex.
Established 1855
Export Division: Oil Field Machinery Co., 90 West St., New York, N. Y.

Lowest Cost First and Last
Ajax Bull Ropes
"Strength in Every Length"
AJAX ROPE COMPANY INC.
SINGER BUILDING ANNEX
95-97 LIBERTY STREET
NEW YORK
Sales Representatives:
Charles H. Moore, Hotel Alexander, Tulsa
C. H. Brown, 405 Holmes Building, Fort Worth, Tex.
Warehouse Representative:
H. D. Hedrick, Tulsa Storage & Transfer Co.

A FIVE-LINE Classified Ad (30 words) can be inserted in The Oil and Gas Journal four times for $5.50—a small cost to acquaint 25,000 readers with your product or service.

The World's Most Durable Valve Cup

Wear Better — Last Longer
Uniform Size — Best Quality

"LUBRIKUPS"
Manufactured only by
WILLIAMSPORT DEVELOPMENT COMPANY
WILLIAMSPORT, PENNA., U. S. A.

GAUGE POLES

Any Length — For Oil Measurements

"MARSH-JOINT"

For sale by oil country supply houses or furnished promptly by the factory at Titusville, Pa.

Correspondence Solicited

MARSH GAUGE POLE COMPANY
TITUSVILLE, PA.

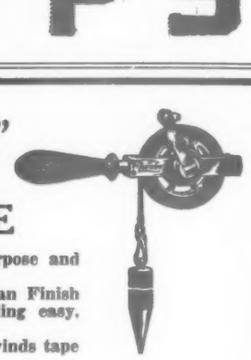
GOULDS

FOR ALL PIPE LINE AND REFINERY SERVICES

BULLETINS ON REQUEST
GOULDS PUMPS, INC.
Seneca Falls, N. Y.
Branches or Agencies in All Principal Cities

PUMPS

LUFKIN "Atlas"



GAUGING TAPE

By far the world's best tape for this purpose and the only one specially designed for it.
Extra heavy ½ inch Steel Line with Nubian Finish and Instantaneous Readings, making reading easy, rapid and accurate.
Lock handle Frame, also extra sturdy and winds tape speedily. Practical 18 oz. bob.

Send for Catalogue
"Tapes and Rules For The Oil Fields."
TAPES FOR GAUGING, STRAPPING AND GENERAL WORK

New York Windsor, Ont. — THE LUFKIN RULE CO. — SAGINAW, MICH.

Dutch East Indies ..	151,633	2,028
United States	21,497,465	275,333
Gasoline, total	4,772,714	337,303
United States	4,772,714	337,303
Kerosene, total	5,130,185	220,741
British Borneo	574,755	21,955
United States	3,722,545	157,017
Lubricating oils, total.	2,039,421	230,619
United Kingdom ...	148,606	25,110
Australia	61,681	13,356
United States	1,902,916	207,828

PHILIPPINE ISLANDS (1924)

(Average exchange value peso in 1924, $0.50)

	Quantity, liters	Value in pesos
Crude oil, total 268,134,548		4,105,819
United States 178,511,710		2,307,071
Dutch East Indies .. 89,622,838		1,798,748
Gasoline and other motor spirits, total	38,873,404	4,912,598
United States	24,309,310	3,629,041
Dutch East Indies ..	14,064,094	1,283,557
Kerosene, total	65,173,701	5,846,168
United States	54,314,312	5,425,184
Dutch East Indies ..	10,859,389	420,984
Lubricating oil, total..	10,300,961	2,173,857
United States	8,581,316	1,993,941
Dutch East Indies ..	1,719,374	179,838

BRITISH MALAYA

(Exchange value Straits dollar in 1925, $0.561)

		Value in Straits dol.
Kerosene, total, tons..	110,024	18,094,676
British possessions..	37,349	5,961,724
United States	11,629	1,925,991
Other countries	61,036	10,206,960
Liquid fuel, total, tons	303,502	11,989,678
British possessions..	13,985	496,658
United States	17,054	605,417
Other countries	272,463	10,887,603
Lubricating oils, total, gallons	6,224,743	4,180,965
United Kingdom ...	128,834	175,086
British possessions..	132,109	153,364
Europe	5,248	5,649
United States	1,249,932	1,445,714
Other countries	4,708,620	2,401,152
Motor spirit, total, tons	226,832	62,542,643
British possessions..	63,198	17,422,511
United States	77,000	210,000
Other countries	161,864	44,910,132

DUTCH EAST INDIES (1924)

(Average exchange value florin, 1924, $0.38; par, $0.40)

	Quantity	Value in florins
Kerosene, liter, total..	38,937,708	2,920,338
United States	35,988,482	2,699,136
Straits Settlements..	2,301,857	172,639
Benzine and gasoline, liter, total	3,376,366	472,692
United States	549,837	76,977
British Borneo	2,757,954	386,114
Lubricating oil, metric tons, total	8,499	2,634,717
United States	7,378	2,287,175
Straits Settlements..	545	167,023
Hongkong	182	56,325
Netherlands	81	25,272
Germany	38	11,705
Crude petroleum, liter, total	1,154,118	23,082
British Borneo	794,824	15,896

INDIA

(Average exchange value rupee in 1925, $0.3626)

	Quantity, gallons	Value in rupees
Fuel oils, total	86,599,766	19,445,828
Persia	69,701,096	13,898,930
Borneo (Dutch)	14,599,813	4,839,013
Straits Settlements..	2,243,702	694,445
Kerosene, total	70,345,064	45,762,302
Russia	3,313,667	1,912,876
Georgia	996,975	514,065
Straits Settlements..	2,333,803	1,632,683
Sumatra	1,148,962	735,087
Borneo (Dutch)	14,867,813	7,889,050
United States	45,485,437	31,373,754
Lubricating oils (batching oils), total.....	11,739,728	6,015,602
Borneo (Dutch)	4,373,063	2,186,531
United States	7,138,044	3,616,187
Other lubricating oils, total	11,155,082	16,269,310
United Kingdom ...	770,693	1,576,763
United States	1,005,808	1,169,481

CHINA (1924)

(Average exchange value Haikwan tael in 1924, $0.81)

		Value in Haikwan taels
Kerosene, total 223,207,104		57,811,062
United States 177,342,689		46,486,943
Borneo	7,013,540	1,611,167
Persia	6,060,388	1,649,902
Sumatra	31,268,943	7,631,910
Lubricating oil, totals.	9,129,302	3,581,385
Fuel oil, total, tons...	104,025	2,306,438
Gasoline, naphtha	7,265,093	4,068,401

AUSTRALIA (1924-25)

(Average exchange value pound in 1924, $4.417; 1925. $4.829)

	Quantity, gallons	Value in pounds
Kerosene and other refined burning oils, total	24,919,890	862,389
British Borneo	579,175	14,089
Netherlands East Indies	7,273,345	183,233
United States	17,058,370	665,067
Lubricating mineral oils, total	9,413,081	364,700
United States	9,273,577	351,286
Petroleum, crude, total	41,832,780	500,482
Netherlands East Indies	32,282,201	382,317
Persia	9,487,778	117,209
Gasoline and spirits, total	89,750,852	5,379,163
Netherlands East Indies	42,502,993	2,168,643
United States	47,244,503	3,210,270

C. R. THOMAS
Petroleum Geologist
Tulsa, Okla.
Phone 8390 314 Clinton Bldg.

GEO. C. MATSON
GEOLOGIST
2-3049—Phones—2-1833
408 Cosden Bldg., Tulsa, Okla.

F. JULIUS FOHS
OIL GEOLOGIST
Mason Bldg., Houston, Texas
818 Kennedy Bldg., Tulsa, Okla.
51 E. 42nd St., New York
Cables: Fohsoil
Codes: Bentley & McNeil
No Outside Work Done.

JOHN B. KERR
PETROLEUM GEOLOGIST
Phone Garfield 4734
601 BALBOA BLDG.
SAN FRANCISCO, CALIF.

WALTER STALDER
OIL GEOLOGIST
Crocker Bldg.
SAN FRANCISCO, CALIF.

V. H. McNUTT
Consulting Geologist
Petroleum and Potash
San Antonio, Tex.
Carlsbad, N. M.

JOHN L. RICH
PETROLEUM GEOLOGIST
OTTAWA, KANSAS

EDWIN B. HOPKINS
CONSULTING GEOLOGIST
25 Broadway
NEW YORK

Cables: Cealiach, New York — Telephone: Whitehall 8256
JOHN EOGHAN KELLY
Consulting Engineer
17 Battery Place, New York City, N.Y.
Pasaje Coloma 6, Guatemala, C. A.
Examination, appraisal, management, negotiation of petroleum properties, mines, natural resources. Exceptional facilities in Latin America.

Wilbur E. Brown G. Thomsen, Jr.
BROWN & THOMSEN
GEOLOGISTS
419 West Grand Ave.
OKLAHOMA CITY, OKLA.

L. G. Huntley J. R. Wylie, Jr.
Shirley L. Mason
HUNTLEY & HUNTLEY
PETROLEUM GEOLOGISTS AND ENGINEERS
Frick Building PITTSBURGH, PA.

Robert H. Wood Virgil O. Wood
WOOD & WOOD
GEOLOGISTS AND PETROLEUM ENGINEERS
Phone 2-1725
302 Security National Bank Bldg.
TULSA, OKLA.

Detailed Operations in All Fields for Month of September

SUMMARY OF ALL FIELDS

Summary of Wells Completed

Field—	Comp.	Prod.	Dry	Gas
Eastern	538	2,778	60	76
Central Ohio	43	688	8	23
Lima	48	847	1	0
Michigan	10	158	1	0
Indiana	20	226	9	2
Illinois	47	1,188	13	1
Kentucky	104	1,089	24	3
Tennessee	0	0	0	0
Kansas	126	11,212	48	3
Oklahoma	393	45,734	140	24
North and West Tex.	569	58,959	176	13
Texas Panhandle	115	33,089	3	6
East Central Texas	32	20,127	8	0
Gulf Coast	111	108,926	85	0
Southwest Texas	63	10,196	7	11
Arkansas	73	2,569	16	3
Louisiana	92	4,577	40	10
Wyoming	45	2,610	11	0
Montana	52	6,055	25	3
Colorado	3	600	2	0
New Mexico	11	607	3	0
Total September	2,494	312,235	629	178
Total August	2,726	344,084	714	143
Difference	232	31,849	85	35

SUMMARY OF NEW WORK

Rigs and Wells Drilling

Field—	Rigs	Drg.	Total
Eastern	179	547	726
Central Ohio	20	101	121
Lima	2	53	55
Michigan	0	47	47
Indiana	11	49	60
Illinois	1	49	50
Kentucky	9	191	200
Tennessee	0	10	10
Mississippi	5	10	15
Alabama	0	4	4
Florida	4	9	13
Kansas	62	326	388
Oklahoma	250	1,126	1,376
North and West Texas	144	824	968
Texas Panhandle	129	480	609
East Central Texas	13	55	68
Gulf Coast	55	184	239
Southwest Texas	36	93	129
Arkansas	31	87	118
Louisiana	49	123	172
Wyoming	28	331	359
Montana	16	144	160
Colorado	16	99	115
Utah	6	32	38
New Mexico	10	145	155
Total September	1,076	5,119	6,195
Total August	1,055	5,178	6,233
Difference	21	59	38

Note—In the following report the Section, Township and Range are given first; then the farm, the owner, the serial number of the well and the initial production of the well. The rigs and wells drilling are set forth in similar manner. In lines where the Section, Township and Range are missing the wells are located in the Sections, Townships and Ranges which appear next above in the report.

OKLAHOMA FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Osage	55	5,040	18	2
Tulsa	8	200	6	0
Okmulgee	54	2,952	21	7
Seminole	17	11,831	4	0
Okfuskee	11	495	5	1
Hughes	16	4,078	6	1
Muskogee and Wagoner	12	544	8	1
Creek	72	5,114	14	4
Pawne	11	1,037	6	0
Kay	18	5,273	3	1
Garfield	25	3,234	11	0
Payne	9	910	3	0
Lincoln	7	576	4	0
Grady	8	330	1	1
Stephens and Cotton	12	268	5	1
Carter	24	3,260	2	3
Miscellaneous	34	592	22	2
Total September	393	45,734	140	24
Total August	539	75,169	169	45
Difference	146	29,435	29	21

Summary of Rigs and Wells Drilling

County—	Rigs	Drg.	Ttl.
Osage	14	78	92
Tulsa	8	19	27
Okmulgee	18	68	86
Seminole	64	195	259
Okfuskee	8	43	51
Hughes	1	41	42
Muskogee and Wagoner	11	23	34
Creek	39	129	168
Pawnee	7	41	48
Kay	12	91	103
Grant	1	12	13
Payne	5	29	34
Lincoln	1	30	31
Garfield	6	60	66
Noble	1	12	13
Pottawatomie	2	13	15
Grady	13	28	41
Comanche	2	15	17
Stephens and Cotton	7	39	46
Garvin and Pontotoc	2	12	14
Carter	14	62	76
Miscellaneous	14	86	100
Total September	250	1,126	1,376
Total August	231	1,135	1,366
Difference	19	9	10

OSAGE COUNTY
WELLS COMPLETED

35-29-11	Osage Dev. (Barnsdall) 42	100
12-27-5e	Phillips Pet. 6	150
	Phillips Pet. 11	250
7-27-6e	Phillips Pet. 10	200
11-27-10	Pure Oil 89	200
21-26-6e	Lewis Oil 8	352
	Lewis Oil 9	300
5-20-12	Barnsdall Oil 16	30
	Gillespie & Sons 6	20
15-29-10	Blackwell O. & G. 1	dry
7-28-7e	Tidal Osage Oil 18	dry
2-27-5e	Skelly Oil 3	dry
36-25-5e	Gypsy Oil 1	dry
10-25-8e	Carter Oil 1	dry
24-21-9e	Warwick Oil 1	dry
15-29-10	Keener O. & G. 20	20
31-29-12	R. G. Jennings 4	25
12-27-5e	Phillips Pet. 7	250
8-27-11	Osage Gas Prod. Co. 368	gas
9-27-11	Osage Gas Prod. Co. 370	gas
10-27-11	C. O. Ross et al 2	dry
25-27-11	Knupp Oil Co. 10	40
21-26-6e	Phillips Pet. 3	530
27-24-10	Winona Oil 5	15
12-23-8e	Peters Pet. 10	130
28-23-10	Mid-Cont. Pet. 1	dry
36-22-8e	Mid-Kansas Oil 2	dry
18-22-9e	Atlantic O. P. 1	dry
18-22-10	Mid Co Pet. 16	40
24-21-9e	Devonian Oil 1	dry
16-21-12	Commercial Drlg. Co. 9	dry
22-21-12	Tidal Oil 3	5
21-26-6e	Phillips Pet. 2	450
12-23-8e	Twin State Oil 1	20
21-23-8e	Barnsdall Oil 1	dry
	Beacon Oil & Alcorn Oil 25	dry
6-23-9e	Comar Oil 1	40
7-23-9e	Continental & Prairie 1	dry
35-22-8e	Skelly & Moore 1	150
19-21-12	Kewanee O. & G. 10	dry
30-21-12	Elliott & Smith 26	25
35-20-11	Devonian Oil 1	dry
21-25-6e	Prairie O. & G. 12	425
15-29-11	C. O. Ross & Brown 13	3
7-27-6e	Phillips Pet. 6	125
9-26-6e	Carter Oil 13	25
21-26-6e	Lewis Oil 10	325
29-25-8e	Lewis Oil 11	190
22-25-11	I. T. I. O. Co. 345	dry
12-23-8e	Peters Pet. 11	50
	Twin State Oil 2	120
22-22-9e	H. E. Bertenshaw 3	25
2-21-8e	Barnsdall Oil 3	110
7-21-11	Skelly Oil 2	35
21-25-6e	Prairie O. & G. 13	275
	Wells completed	55
	Production	5040
	Dry	18
	Gas	2
	Gas production	2,500,000

TULSA COUNTY

10-19-14	Norter, Linden et al 1	dry
3-16-12	Sanderson, S. W. Anthony 2	dry
34-19-11	Anderson, Riverland Oil 2	dry
1-18-12	Barnett, Sherman et al 1-A	dry
22-17-13	Soffie, Franchott & Mid-Cont. Pet. 15	dry
6-19-10	McKee, Superior Oil 1	175
14-19-10	Bell, W. E. Holmes 2	25
13-16-12	Doneghy, Winemiller et al 16	dry
	Wells completed	8
	Production	200
	Dry	6

OKMULGEE COUNTY

25-13-11	Lewis, J. A. Swindler & Sons 8	60
16-15-14	Bruner, The Texas Company 5	360
21-15-14	S. Garnett, The Texas Company 14	240
22-15-14	Severs, Twin State Oil 5	25
1-14-14	Harris, E. A. Hutchinson 2	50
13-11-13	Kanard, B. Morgan 6	gas
5-15-12	Hickory, Henry Oil 1-A	dry
19-14-12	Filly, J. M. Kessler 1	dry
32-14-15	Dumit, J. R. Parks 5	dry
33-16-11	Simms, Barnsdall Oil 1	10
10-15-12	Bighead, T. A. Johnson 1-A	dry
23-15-12	Peloche, Devonian Oil 2	gas
24-15-12	Blair, C. E. Campbell 2	40
29-15-12	Manuel, D. D. Mickelson 2	dry
32-13-11	Thomas, Denver P. & R. 8	dry
8-13-12	Morton, H. C. Marsey 8	15
5-11-12	Jackson, C. O. Buckles 17	7
17-16-13	Gibson, A. E. Kirkland & Sons 3	dry
15-15-14	Francis, McCulloch Oil 2-A	100
16-15-14	Bruner, The Texas Company 6	200
	Bruner, The Texas Company 8	300
21-15-14	Garnett, McCulloch Oil 6	240
9-14-14	Stevens, Future Dev. Co. 6	gas
15-14-14	Colbert, Drew-Beams 4	dry
23-14-14	Corbray, M. Beard 14	dry
32-14-14	Rentie, Gardner et al 2	dry
15-13-14	Doyle, Simms Oil 18	25
21-13-14	Dunn, E. J. Lambert 1-A	10
24-13-14	Thornsberry, Iron Mtn. Oil 12	50
4-11-13	Hawkins, Tiger Mtn. Oil 1	gas
24-16-14	Grayson, W. H. Elson & Carter Oil 1	dry
27-16-14	Peters, Harsha & Delaney 4	dry
23-15-11	Bruner, Le Bean et al 5	110
11-14-12	Smith, Abbott & Dillard et al 1-A	dry
28-13-11	Jones, The Texas Company 2	gas
4-11-12	Hawkins, Eagle Picher Lead Co. 1	gas
16-15-14	McKinney, C. L. McMahon 1	dry
	Bruner, The Texas Company 9	100
21-15-14	Garnett, McCulloch Oil 5	200
19-14-13	Berryhill, McCulloch Oil 9	dry
35-14-14	Anderson, J. L. Selby 33	15
8-14-15	Anderson, J. L. Powell 2	dry
28-13-14	Doyle, Columbus Drlg. Co. 3	15
10-12-13	Manuel, W. B. Pine 4	dry
34-16-11	Grayson, Iron Mtn. Oil 3	30
20-16-14	Mayfield, Anglo Texas Oil 1	80
8-15-12	Doneghy, J. J. Schock et al 1	dry
7-14-11	Farmer, Holmes et al 1	dry
4-14-12	Adams, Devonian Oil 1-A	90
25-14-12	Unallotted, J. H. Rebold 1	dry
32-11-12	Ashbury, Colorado O. & G. 1	dry
3-15-14	Kelly, W. B. Pine 1	gas
21-16-14	S. Garnett, The Texas Company 15	480
32-14-14	S. Rentie, X-Ray Oil 3	dry
	Wells completed	54
	Production	2952
	Dry	21
	Gas	7
	Gas production	37,250,000

SEMINOLE COUNTY

33-10-6e	Youngblood, Searight et al 3	525
34-10-6e	Stewart, Carter Oil 1	3792
14-8n-7e	Carolina, Magnolia Pet. 5	dry
32-8n-8e	Grayson, Amerada Pet. 1	dry
5-7n-8e	Skinner, Magnolia Pet. 9	13
6-7n-8e	Carolina, Homaokla Oil 3	963
	Carolina, Homaokla Oil 6	dry
10-9n-5e	Sullivan, Barnsdall Oil 1	26
24-9n-5e	Carter, Gypsy Oil 1	4155
18-9n-8e	Bowlegs, Gypsy Oil 2	160
33-8n-8e	Scott, Magnolia Pet. 3	20
8-10-8e	Willis, Gypsy Oil 8	15
24-9n-6e	Carter, Barndall Oil 3	1720
14-8n-7e	Norval, Magnolia Pet. 2	80
5-7n-8e	Skinner, Magnolia Pet. 11	490
6-7n-8e	Carolina, Homaokla Oil 7	dry
	Gilstrap, Magnolia Pet. 2	22
	Wells completed	17
	Production	11831
	Dry	4

OKFUSKEE COUNTY

35-11-9e	Wind, Atlantic O. P. Co. 1	150
23-11-11	Likowski, F. A. Ravel et al 1-A	5
17-12-10	Harrison, Amerada Pet. 2	dry
3-11-10	Stidham, Link Oil 1	dry
15-10-12	Starr, Evans & Starr 1	dry
21-10-11	Barnett, Lou Umburn & Future Dev. 1	dry
3-12-11	Morgan, Barnsdall Oil 5	gas
10-12-11	Randall, Barnsdall Oil 3	dry
33-12-11	McCoy, Josey Oil 16	190
36-10-9e	Dacon, Amerada Pet. 1	70
4-10-11	Barnett, R. W. Vierson et al 1	80
	Wells completed	11
	Production	495
	Dry	5
	Gas	1
	Gas production	3,000,000

HUGHES COUNTY

26-9n-9e	Davis, Independent O. & G. 3	340
27-9n-9e	Long, Gypsy Oil 3	90
35-9n-9e	McKinney, Transcontinental Oil 1	230
5-7n-8e	Frederick, Amerada Pet. 5	1068
18-9n-9e	Oliphant, Magnolia Pet. 1	dry
3-9n-11	Sutton "B", Tidal Osage Oil 9	125
5-7n-8e	Frederick, Amerada Pet. 2-A	1560
	Garner, Humble O. & R. 1	15
	Frederick, Magnolia Pet. 1	500
	Garner, Magnolia Pet. 2	dry
10-9n-10	Ana Lee, Detrick et al 1	dry
18-8n-10	Diamond "C", Dixie Oil 1	dry
5-7n-8e	Garner, Dixie Oil 2	dry
	Garner, Magnolia Pet. 1	150
4-9n-9e	Alexander, Papoose Oil 10	dry
14-7n-8e	Jacoba, W. R. Ramsey 2	gas
	Wells completed	16
	Production	4078
	Dry	6
	Gas	1
	Gas production	13,000,000

MUSKOGEE & WAGONER COUNTIES

5-14-19	Crittenden, C. M. Bradley 2	20
11-17-16	Robbins, E. R. Perry et al 2	dry
21-17-16	Childers, Sevreda Oil 3	dry
11-16-16	Grayson, Wilson & Tillman 1	gas
28-15-15	Manuel, Link Oil 1	dry
26-17-16	Drew, W. B. Pine 4	dry
31-17-17	Peters, Mitchell Oil 1	dry
21-16-16	Boles, Mitchell Oil 1	dry
9-18-16	Hawkins, B. B. Wheeler et al 2	dry
29-15-15	Vandersliice, E. L. Kistler 3	114
17-15-17	E. Warrior, W. R. Sommerville 1	400
18-14-19	Reid, C. M. Bradley 1	dry
	Wells completed	12
	Production	544
	Dry	8
	Gas	1
	Gas production	2,250,000

CREEK COUNTY

13-19-8e	Ross (W) Gled Oil 4	150
	Ross (W) Gled Oil 5	100
32-18-7e	Derrisaw, Magnolia Pet. 3	20
	Drumright, Magnolia Pet. 1	15
23-17-8e	Walker, Savoy Oil 3	30
17-19-9e	Murrell, Mid-West & Gulf 2	gas
3-17-9e	Chisholm, Harwell et al 1	110
	Simmons, The Texas Company 4	35
10-17-9e	Bruce, Roxana Pet. 2	135
32-17-10	Yellowhead, Skelly Oil 1	320
34-17-11	Tiger, Overless et al 1-A	5
14-16-11	Cowen, J. A. Porter et al 1	5
25-14-9e	Tye, Wood Oil 1	gas
4-19-10	Unallotted, Gledden et al 1	dry
	Unallotted, Hivick et al 2	dry
13-19-8e	Lowe, J. B. Grieves 6	dry
20-19-8e	Smiley, Steinberger & Smith 2	dry
26-17-8e	Cobb, Barnsdall Oil 3	140
6-18-12	Bigpond, Regal Oil 29	125
16-17-10	Fulson, Chief Drlg. Co. et al 1	dry
20-17-10	Unallotted, Jackson & Wise 1-A	15
24-17-10	Tahkaney, H. W. Wright 9	15
	Tahkaney, H. W. Wright 10	10
17-17-11	Wacoche, Shaffer O. & R. 6	220
9-16-12	Penoke, Turner & Turner 4	30
9-14-10	Tiger, Johnson & Ashe et al 1	40
16-14-10	Bear, Atlantic O. P. 1-A	320
	Reynolds, Atlantic O. P. 1	40
	Tiger, Atlantic O. P. 2	25
32-14-10	Walker, Mid-Cont. Pet. 6	115
	Jones, T. B. Slick 1	125
9-16-8e	Yardy, Margay Oil 4	60
10-16-8e	Myers, Slick & Kawfield 2	dry
5-18-7e	Rector, Riverside O. & R. Co. 2	120
18-18-7e	Fisher, Shaffer O. & R. Co. 13	dry
14-17-8e	Fry, Alvard & West 4	10
22-17-8e	Mitchell, Barnsdall Oil 4	20
	Mitchell, Transcontinental Oil 2	60
36-15-7e	Tiger, R. J. Jennings 1	30
12-14-8e	McKan, Skelly Oil 15	10
18-19-9e	Smith, Roxana Pet. 1	dry
22-19-10	Timothy, Holmes et al 5	dry
33-19-10	Kiefer, Bu-Vi-Bar Pet. 1	dry
22-17-9e	Walker, Westland Oil 2	95
4-17-10	Johns, McCulloch Oil 1	80
24-17-10	Bucktrot, Pioneer Pet. 10	15
12-16-10	Hughes, Shaffer O. & R. Co. 1	dry
12-16-11	Ricks, H. U. Bartlett 2	5
20-14-10	Scott, Wilcox O. & G. 13	25
32-14-10	Unallotted, Empire G. & F. 2	140
5-18-7e	Jones, Magnolia Pet. 4	135
32-18-7e	A. Drumright, Shaffer O. & R. Co. 10	40
15-17-7e	Stewart, Mid-Cont. Pet. 2	480
	Stewart, Mid-Cont. Pet. 26	10
17-17-7e	Tiger, Gibson & Baker 1-A	gas
11-17-8e	Wyatt, Bu-Vi-Bar Pet. 1	gas
35-16-8e	Harjo, Wilcox O. & G. 4	17
25-15-8e	Herrod, C. G. Tibbens 2	10
35-15-8e	Hill, C. G. Tibbens 3	7
12-14-8e	Ponds, Gypsy Oil 10	90
26-14-8e	Johnson, C. G. Tibbens 12	10
24-17-10	Bucktrot, Pioneer Pet. 9	15
8-17-11	Freeman, O. M. Irelan 8	250
16-17-11	Broadnox, Misener & Reesman 1	280
31-17-9e	Marshall, Gypsy Oil 1	dry
6-18-12	Sango, Sunray Oil 8	100
1-18-11	Richards, Gypsy Oil 12	665
3-19-9e	Morgan, Holmes et al 4	10
17-19-9e	Murrell, Mid-West & Gulf 3	dry
2-16-10	Scott, Kingsmith Refg. Co. 16	dry
9-14-10	Kimble & Reading, McMan Oil 1	20
16-14-10	Bear, Atlantic O. P. 2	150
	Wells completed	72
	Production	5114
	Dry	14
	Gas	4
	Gas production	12,000,000

PAWNEE COUNTY

35-22-6e	Dobson, Devonian Oil 2	15
22-20-6e	Lesher, Fern Oil 3	35
16-22-4e	School land, Magnolia Pet. 1	dry
35-22-6e	Hays, Devonian Oil 1	dry
1-21-6e	Bryan, Independent O. & G. Co. 1	dry
35-22-6e	Miller, Devonian Oil 1	dry
24-21-7e	Mullendore, Minnehoma, Oil 8	600
33-20-5e	School land "M", Marland & Mid-Cont. Pet. 2	367
16-20-6e	School land, Magnolia Pet. 5	dry
24-20-8e	Wasson, The Prairie O. & G. 19	dry
24-21-7e	Mullendore, Minnehoma Oil 9	20
	Wells completed	11
	Production	1,037
	Dry	6

KAY COUNTY

4-27-1w	Kelly, Arkansas Fuel Oil Co. 4	212
20-29-1e	Bradley, Carter Oil & Ona 1	258
30-29-1e	Hennessey, Junction Oil 2	dry
4-28-2w	Wood, Moore Oil 1	dry
5-28-1w	Johnson, Comar Oil 1-W	256
9-27-1w	Geiger, Blackwell O. & G. 9	320
21-29-1w	Duncan, Comar Oil 12	422
5-28-1w	McCullough, Comar Oil 1	dry
3-27-1w	Moore, Arkansas Fuel Oil 1	385
28-25-1w	Mahoney, Wents Oil Corp. 14	672
20-29-1e	Shimp, Carter Oil & Ona 1	230
5-28-1w	Lawrence, Comar Oil 4	251
8-27-1w	Moore, Blackwell O. & G. 2	200
12-26-2w	North, Marland Oil 6	607
7-26-1w	Kaney, Blackwell O. & G. 1-A	gas
29-25-1w	Highley, Blackwell O. & G. 1	1370
	Wells completed	16
	Production	5273
	Dry	3
	Gas	1
	Gas production	4,500,000

GARFIELD COUNTY

13-22-4w	School land, Mid-Cont. & Marland 64	831
	Walker (N), Sinclair Oil 25	500
	Walker (N), Sinclair Oil 54	125
	Walker (N), Sinclair Oil 55	110
	Walker (N), Sinclair Oil 56	280
	Walker (N), Sinclair Oil 60	903
18-22-3w	Schroeder, Roxana Pet. 8-H	dry
19-22-3w	Kisner (W), Sinclair Oil 35	55
21-33-3w	Allen, Champlin Refg. Co. 2-A	dry
26-23-7w	Cox, Katherine Oil Synd 1	dry
35-23-3w	Gayton, Failing & Lawson 1	dry
24-22-4w	Belveal, Sinclair Oil 25	dry
36-22-4w	Austin, Sinclair Oil 6	33
18-22-3w	Hartley, Sinclair Oil 22	dry
19-22-3w	Kisner, Sinclair Oil 34	15
30-22-3w	Crews, Sinclair Oil 6	dry
11-20-8w	Secor, Garfield Buell et al 1	dry
1-22-4w	Seaman, Hopper et al 1	dry
13-22-4w	School land, Mid-Cont. Pet. & Marland 6-A	20
24-22-4w	Belveal, Healdton Pet. 20	3
16-22-3w	School land, Hopper-Chappell 1	dry
18-22-3w	Hartley, Sinclair Oil 35	dry
	Hartley, Sinclair Oil 45	250
	Hartley, Sinclair Oil 47	dry
19-22-3w	Kisner W. Sinclair Oil 27	10
10-27-1w	Jones, Prairie O. & G. 5	40
1-26-2w	Smith "A," Prairie O. & G. 7	50
	Wells completed	25
	Production	3234
	Dry	11

PAYNE COUNTY

27-18-3e	Murlin, Gypsy Oil 1	dry
26-18-3e	Morehead, Deep Rock O. & G. 1	54
26-18-3e	Liston, Empire G. & F. 4	60
26-18-4e	Broyles New England O. & P. L. 3	85
22-20-3e	Royester, Ossenbeck 1	dry
8-19-5e	Garr, Magnolia Pet. 3	dry
26-18-3e	Waltman, T. C. M. Oil 2	96
10-18-4e	Cole, Deep Rock O. & G. 1	60
5-17-4e	Sharrum, Mulberry Oil 3-A	555
	Wells completed	9
	Production	910
	Dry	3

LINCOLN COUNTY

8-15-6e	Owens, Magnolia Pet. 2	320
	Varner, Phillips Pet. 1	231
15-15-6e	Hubbard, Johndahl 1	dry
7-14-4e	Norton, T. B. Slick 1	25
11-14-5e	Caves, Gypsy Oil 15	dry
	Chapman, Magnolia Pet. 3	dry
33-13-4e	Williams, Phillips Pet. 1	dry
	Wells completed	7
	Production	576
	Dry	4

GRADY COUNTY

27-3n-5w	Polson, Carter Oil 1	30
	Polson, Carter Oil 2	50
27-3n-5w	Adair, Carter Oil 1	gas
27-3n-5w	Kilgore, Clark & Cowden 1	20
34-3n-5w	Nation, Briscoe & Hall 1	150
26-4n-8w	Ridley, Nicholos O. & D. Co. 1	dry
27-3n-5w	White Eagle Polson, Carter Oil 2	45
34-3n-5w	Wham, Carter Oil 2	35
	Wells completed	8
	Production	330
	Dry	1
	Gas	1
	Gas production	25,000,000

STEPHENS & COTTON COUNTIES

12-4n-10w	Cooper, W. B. Lindsey 1	dry
36-2n-9w	School, Malernee 1	dry
28-1n-8w	Taliaferro, Carter Oil 1	200
34-1n-5w	Ziegler, Magnolia Pet. 18	8
24-1n-9w	Plemmons, E. S. Carry Oil 2	dry

25-1s-9w D. Russell, Magnolia Pet. 8.. 33
27-1s-8w Schick, Walker Valley Oil 4. 12
26-2s-9w School, Malernee 2..... gas
32-1n-5w Charleston, Gates Oil 1..... dry
20-1s-8w D. Bartley, Magnolia Pet. 11. 5
27-1s-8w Schick, Walker Valley Oil 3.. 10
8-2s-4w Cobb, Magnolia Pet. 9..... dry

Wells completed 12
Production 268
Dry 5
Gas 1
Gas production 16,000,000

CARTER COUNTY

33-1s-3w Bumpass, Cameron Refg. Co. et al 1 42
3-2s-3w Smith, Wirt Franklin 1..... 450
17-2s-2w Moore, Skelly Oil 1..... 40
23-2s-3w E. Lohman, Magnolia Pet. 12. dry
33-1s-3w Bumpass, Magnolia Pet. 6.... gas
Lusk, Humble O. & R. 5..... 345
34-1s-3w Fish, Magnolia Pet. 4 442
2-2s-3w Pruitt, Wirt Franklin & Prairie 4 340
Smith, Skelly Oil 1..... 135
Smith, Skelly Oil 2..... 348
23-2s-3w E. Lohman, Magnolia Pet. 10 gas
16-2s-2w Cox, Magnolia Pet. 1 43
20-5s-1e Baptiste, Amerada Pet. 25... 25
24-5s-1e Jelliff, Schermerhorn et al 1. dry
33-1s-3w Bumpass, Magnolia Pet. 3.... 150
23-2s-3w McClain, Magnolia Pet. 1..... 12
16-2s-2w Wilson, Magnolia Pet. 2..... 30
21-2s-2w Wilson, Magnolia Pet. 3..... 35
20-5s-1e Baptiste, Amerada Pet. 26 .. 45
19-1s-3w Jordan, Humble O. & R. 5... 460
33-1s-3w Bumpass, Humble O. & R. 1. gas
34-1s-3w Snyder, Magnolia Pet. 3..... 100
23-2s-3w J. Lohman, Magnolia Pet. 10. 158
20-5s-1e Criner, Amerada Pet. 9..... 60

Wells completed 24
Production 3260
Dry 2
Gas 3
Gas production 48,500,000

MISCELLANEOUS COUNTIES

Beckham County—
25-8n-22w McGee, W. R. Duke 1..... dry
Canadian County—
34-13-9w Dawson, Thos. Revelle 1..... dry
Cotton County—
12-5n-9w Wagoner, Gorton Trust Co. 6 dry
5-5n-9w Stevens, Magnolia Pet. 2..... 6
Noble County—
21-21-2w Reynolds, Magnolia Pet. & Bu-Vi-Bar 1..... dry
26-22-2w Schoop, Champlin Refg. Co. 1 dry
15-21-2w Taylor, Magnolia & Bu-Vi-Bar 1..... dry
9-24-1e Miller, Independent O. & G. et al 1..... dry
33-22-2w Burk, Elane Oil 1..... dry
13-22-2e Tillman, Skelly Oil & A. D. Krow 1..... dry
Nowata County—
31-25-17e Campbell, The Prairie O. & G. 16 50
Rogers County—
3-20-17e Swepston, Hadley, Mitchell 1 dry
Sequoyah County—
32-11-25e Miller, Sequoyah Gas Co. 1... dry
15-11-26e Hicks, Citizens Gas Co. 1..... gas
Pittsburg County—
8-2n-16e Wilkins, Baker & Hailey 1.. dry
26-9n-16e Jennings, Western Nat. Gas 1 dry
Garvin County—
23-4n-1e McCurtain, Sinclair Oil 1.... dry
16-1n-3w Harris, Magnolia Pet. 12..... 16
17-1n-3w Derdeyn, Carter Oil 8..... 25
Derdeyn, The Texas Company 1 45
20-1n-3w Derdeyn, Magnolia Pet. 1.. 60
35-3n-2e Franklin, T. P. C. & O. Co. 1. dry
Comanche County—
19-2n-9w Guthrie, Westheimer & Daube 1..... 235
21-4n-10w Rowe, Mid-Kansas Oil 1.... dry
30-4n-10w Hinds, Clyde Becker 1..... dry
32-4n-10w Ross, Cochran & Abernathy 1 dry
Gambell, John Graham 2..... dry
4-3n-10w Saunders, Cook & Graham 1 dry
Jefferson County—
33-6s-5w Seay, Gypsy Oil 30..... 30
Seay, Gypsy Oil 31 125
25-7s-4w Black, Pendergraft 1..... dry
33-6s-5w Seay, A. C. Brown 7..... dry
13-7s-6w Aggee, Hivick et al 1..... gas
1-7s-4w Cassidy, New England O. & P. L. 1..... dry

Wells completed 34
Production 592
Dry 23
Gas 2
Gas production 16,500,000

OSAGE COUNTY

Rigs

18-29-12 SW, Keener Oil 1.
27-28-6e SE, Laurel O. & G. 1.
28-27-6e SE, Gypsy Oil 2.
33-27-6e SE Mid-Kansas Oil 6.
20-26-6e SE, Phillips Pet. 10.
27-25-5e SE, Gypsy Oil 1.
21-25-6e SW, Sinclair Oil 3.
31-25-9e SW, I. T. I. Oil 1.
5-24-5e SW, Barnsdall Oil 1.
18-23-9e SW, Peters Pet. 1.
35-22-8e SW, Skelly & Moore 2.
11-21-7e NE, Gypsy Oil 1.
14-21-10 SE, Lillystrand et al 4.
12-23-8e NW, Twin State Oil 3.

Wells Drilling

2-25-6e NE, Prairie O. & G. 1.
10-27-6e NE, Prairie O. & G. 1.
15-29-10 NE, Keener O. & G. 21, 22.
12-28-11 SW, Delmar Oil 1.
1-27-5e SW, Phillips Pet. 5, 7, 9, 12.
26-27-5e NW, Mid-Kansas Oil 11. SW, Skelly Oil 7.
7-27-6e SE, Phillips Pet. 1, 11, 14.
17-27-6e NW, Peters Pet. 5.
34-27-6e NW, Kewanee O. & G. 1. SW, Kewanee O. & G. 1. NE, Kewanee O. & G. 2.
5-27-11 SW, Blackwell O. & G. 1.
10-27-11 SW, C. O. Ross et al 3.
6-26-5e NW, Jess Moore 1.
3-26-6e NW, Marland Oil et al 1.
20-26-6e SE, Phillips Pet. 11, 12.
21-26-6e SE, Lewis Oil 11, 12. SW, Phillips Pet. 1.
25-26-8e NW, Petroleum Drlg. Co. 19.
19-25-8e SE, A. G. Oliphant 4.
29-25-8e SW, The Texas Company 2.
30-25-8e NE, Lewis Oil 4, 5.
31-25-8e NW, A. G. Oliphant 3.
34-25-11 NW, Devonian Oil 14.
15-24-6e NE, Marland Oil 1.
5-24-8e SW, Amerada Pet. 1. NW, Douglas Oil 1. SE, Carter Oil 2, 3.
6-24-8e SW, C. F. Lake et al 2.
11-24-8e SE, Barnsdall Oil 1.
13-24-8e NE, The Texas Company 2.
19-24-8e NE, Atlantic O. P. Co. 1.
21-24-8e SE, Marland Oil 1.
33-24-8e NW, Continental Oil 22.
20-24-9e SE, Tidal Oil 4.
25-24-9e SW, I. T. I. Oil 239.
32-24-9e SW, Peters Pet. 1.
34-24-10 NW, Walker Oil 12.
5-23-7e NW, Sinclair Oil 1.
1-23-8e SE, Tidal Osage Oil 1, 2, 3.
7-23-9e NW, Continental & Prairie 1.
34-23-9e SW, Tidal Osage Oil 1.
17-23-10 SW, New England O. & P. L. Co. 1.
14-23-11 SW, Ashland & Barnsdall Oil 13.
25-22-7e NE, Pure Oil 4.
35-22-8e SE, Skelly & Moore 3.
1-22-9e SE, Superior & Sterling 8.
33-22-9e SE, Skelly Oil 1.
5-22-11 NE, Kewanee O. & G. 16.
28-22-12 NW, Kanupp et al 1.
20-21-12 NW, Oklahoma Nat. Gas 715.
30-21-12 SE Barnsdall Oil 19.
5-20-11 NE, Sand Springs Home 6.
20-20-12 NW, Devonian & Elliott 10.
28-20-12 NW, Continental Oil 16.
29-20-12 NE, Winona Oil 8.

Shut Down

15-29-10 SE, I. T. I. Oil 13.
33-29-10 SE, I. T. I. Oil 344.
6-24-8e SW, C. F. Lake et al 1.
28-24-8e SW, Axelrod et al 2.
8-23-10 NW, Adlum et al 2.
11-23-11 SE, A. H. Pettigraves 5.
24-21-9e NE, Sand Srings Home 97.
24-20-11 SE, Riverland & Inter Ocean 1.
31-20-11 NE, Sand Springs Home 2.
Rigs, 14; wells drilling, 78; total, 92.

TULSA COUNTY

Rigs

6-19-10 McKee, Superior Oil 2.
7-19-10 Burnett, Superior Oil & Swift 1-A.
18-19-10 Bemore, Holmes et al 1-A.
24-19-10 Ragen, Mid-Kansas Oil 1.
29-19-10 Weaver, Dillenback et al 1.
13-19-11 London, Sand Springs Home 5.
23-19-11 Unallotted, Sand Springs Home 2.
1-17-13 Taylor, E. A. Hawley 1.

Wells Drilling

17-19-10 Unallotted, Craig et al 1-A.
4-19-11 Gates, Sand Springs Home 1.
17-19-11 Smith, Hutt & Hutt 6.
19-19-11 Littleton, Commercial Drlg. Co. 5.
23-19-11 Unallotted, Sand Springs Home 1. Steele, Sand Springs Home 1.
29-19-11 Cato, Cato O. & G. 10.
35-19-11 Inchoe, A. A. Thornton 1.
36-19-11 Franklin, Munn Bros. 2.
10-16-12 Jenkins, Thompson & Black 4.
5-16-13 Strip, J. L. Selby 2. Bartholf, Thompson & Black 5.

Shut Down

23-19-11 Arch, Sand Springs Home 1.
29-19-12 Unallotted, Continental Oil 3.
4-19-14 Berryhill, Ora Upp et al 1.
16-18-13 Rentie, L. C. Hivick 3.
6-17-13 Oswalt, Hilt et al 3-A.
12-17-14 McIntosh, W. O. Dickinson 1.
13-16-12 Unallotted, Winemiller et al 1.
Rigs, 8; wells drilling, 19; total, 27.

OKMULGEE COUNTY

Rigs

24-16-12 Tiger, Devonian Oil 8.
26-16-12 Lowe, Baker et al 1.
19-16-13 Grant, Riverland Oil 1.
20-14-12 Elrod, Quinlan & Henry 2.
4-11-12 Hawks, Wier Oil 3.
32-11-12 Ashbury, Colorado O. & G. 2.
17-15-13 Bell, A. W. Kirkland 3.
9-15-14 Corbray, W. B. Pine 3.
32-14-13 Checote, Vincent & Stansberry 1.
2-14-14 Starr, E. A. Hutchinson 5.
13-14-14 Rentie, Elm Oil 10.
15-14-14 Caldwell, Drew Beams 2.
19-14-14 Bradford, J. G. Haas et al 10.
9-14-15 Sells, J. L. Powell 5.
19-14-15 Rentie, M. S. Musselen 1-A.
15-13-14 Doyle, Simms Oil 19.
22-13-14 Fox, Cumberland Pet. 12.
35-13-14 Wilson, W. M. Hewitt 5.

Wells Drilling

6-12-12 Wood, The Prairie O. & G. 1.
20-16-11 Ponse, Erwin et al 1.
20-16-12 Fee, Crider 1.
21-16-14 Rowe, Atlas Oil 3.
29-16-14 Phillips, Anglo-Texas Oil 1.
3-15-11 Fee, Clover et al 8.
4-15-11 Lewis, D. D. Mickelson 2.
23-15-11 Bruner, L. Bean et al 1.
34-15-11 Coleman, The Texas Company 13.
9-15-12 Fortyfour, C. L. McMahon 1.
16-15-12 Marsey, T. A. Johnson 1.
23-15-12 Beloche, Devonian Oil 3.
28-15-12 Hill, Jordan, Thompson et al 5.
34-15-12 Tobler, Shaffer O. & R. 1.
35-15-12 Claunch, J. E. Hammon et al 3.
4-14-11 Lunsford, Sidwell Drlg. Co. 2.
5-14-11 McIntosh, J. H. Rebold 6.
24-14-11 Sango, Abbott, Dillar & Carter Oil 1.
4-14-12 Smith, Campbell et al 1.
23-13-11 Murrell, Barnsdall Oil 8.
25-13-11 Lewis, J. M. Swindler & Sons 9.
33-13-11 Roberts, Radcliff Oil 1-A.
10-13-12 Harrison, Haley & Hollihan 1.
32-12-12 Thomas, E. L. Black 2.
4-11-12 Hawkins, Roy Parkhill 1.
7-11-12 Holmes, Moffitt et al 4.
29-11-12 Beams, J. M. Kessler et al 1.
32-15-12 Roberts, H. Miller 1.
3-15-14 Rentie, W. B. Pine 2.
3-15-14 Kelly, Transcontinental Oil 1.
4-15-14 Beams, Future Dev. & Transcontinental Oil 2.
7-15-14 Brown, E. B. Grubbs 1.
14-15-14 Scott, H. E. Clark et al 4.
15-15-14 Francis, Selby, Hyre & Payne 1-A.
16-15-14 McKinney, F. Sheedy 4.
16-15-14 Bruner, The Texas Company 7, 10.
21-15-14 Garnett, McCulloch Oil 7.
7-14-13 Lacey, Kingwood Oil 1.
24-14-13 Drew, X-Ray Oil 3.
30-14-13 Dunbar, A. G. Hazlett et al 1.
14-14-14 Colbert, T. B. Slick 1.
22-14-14 Wright, Clarion Oil 8.
23-14-14 Corbray, M. Board (Trustee) 15.
27-14-14 Flint, J. C. Lampert 4.
33-14-14 Sutton, W. M. Hewitt 9.
18-14-15 Rentie, A. F. Boone et al 4. Rentie, Gallagher 3.
32-14-15 Durant, J. R. Parks 6.
4-13-14 Fosher, J. K. Gardner 2.
29-13-14 Wiley, F. E. Cuseck et al 5-A.
32-13-14 Lyden, Haynes et al 4.
28-13-15 Hutton, O. T. Stout et al 2.
17-12-13 Burgess, W. B. Pine 1.
11-11-13 Wade, C. R. King 1.

Shut Down

24-16-14 Lowery, E. J. Lambert 1.
3-13-11 Anderson, Vincent et al 1.
27-13-11 Jones, Diamond Oil 1.
11-13-12 Budleman, King & Jackson 3.
7-12-12 Wilson, Morton & Co. 7.
3-11-12 Calloway, B. Martin et al 1.
3-15-14 Rentie, Acta Oil 1.
8-15-14 Rowe, Hennessey et al 3.
19-15-14 Perryman, Custer Oil 8.
9-14-14 Stevens, W. A. George 12.
16-14-14 Love, F. E. Misener 9.
23-14-14 Corbray, C. T. Smith 9.
32-13-13 Bowman, Sheriden Oil 1-A.
Rigs, 18; well drilling, 68; total, 86.

SEMINOLE COUNTY

Rigs

33-11-8e Pierce, Sinclair Oil 11.
33-10-6e Epperson, Searight et al 3.
12-10-7e Micco, Gypsy & Prairie 1.
10-9n-5e Bruner, Independent O. & G. 2. Simpson, Magnolia Pet. 2.
4-9n-6e Cudjo, Gypsy Oil 1. Cluck, Wilcox O. & G. 1.
13-9n-6e Knapp, Carter Oil 2, 3. Carter, Sinclair Oil 1, 2.
14-9n-6e Fixico, Amerada Pet. 3, 4. Killingsworth "A", Amerada Pet. 2. F. Carter, Carter Oil 3, 4. Grisso, Carter Oil 2, 3. Killing, Carter Oil 1. Fixico, Independent O. & G. 1, 2. Goodin, I. T. I. Oil 1. Harjo, I. T. I. Oil 2, 3. Harjo, Tidal Oil 3, 4, 5, 6.
24-9n-6e James, Amerada Pet. 2. Carter, Barnsdall Oil 1-A, 7, 8. J. Carter, Carter Oil 4. B. Carter, Carter Oil 2. Carter, Gypsy Oil 6, 7, 8. James, I. T. I. Oil 6. J. Carter, Tidal Oil 4.
25-9n-6e Gross, Empire G. & F. 1. Harjo, Gypsy Oil 1, 2.
26-9n-6e Fixico, Gypsy Oil 6, 7, 8. Wolf, Gypsy Oil 4. Fixico, Independent & Garland 7, 8. Bowlegs, I. T. I. Oil 4, 5. Fixico, Tidal Oil 7.
34-9n-6e Wilson, Empire G. & F. 1.
35-9n-6e Cudjo, Turman Oil 1.
22-8n-7e Youngblood, Magnolia Pet. 1.
22-7n-6e Hotulka, Barnsdall Oil 1.
32-7n-7e Marshall, I. T. I. Oil 1.
30-7n-8e Street, Carter Oil & Atkinson 1.
25-9n-6e Gross, Prairie O. & G. 2, 3, 4, 5.
10-9n-6e Carter, Prairie O. & G. 1.
13-9n-6e Spencer, Prairie O. & G. 1.

Wells Drilling

34-10-6e Washburn, Prairie O. & G. 1, 2.
33-10-6e Kinkade, Prairie O. & G. 2, 3, 4.
25-9n-6e Gross, Prairie O. & G. 1.
27-9n-6e Strother, Prairie O. & G. 1.
33-11-8e Pierce, Mutual & Continental 4. Pierce, Continental Oil 9. Pierce, Sinclair Oil 10.
26-10-6e Scott, Carter Oil 1.
28-10-6e Baker, Amerada Pet. 1.
33-10-6e Epperson, Searight et al 1, 2. Youngblood, Searight et al 3, 4.
34-10-6e Stewart, Carter Oil 2, 3, 4. Grayson, Mid-Cont. Pet. 2, 3.
35-10-6e Harjo, Wrightsman Oil 1.
31-10-7e Noko, Carter Oil 1.
9-10-8e Hill, Sinclair Oil 2..
11-10-8e King, Gypsy Oil 1.
1-9n-5e Sango, F. J. Searight 1.
2-9n-5e Williams, Magnolia 1.
10-9n-5e Lena, Magnolia Pet. 1. Johnson, The Texas Company 1.
11-9n-5e Sparks, Magnolia Pet. 1.
14-9n-5e Winton, Barnsdall Oil 1.
3-9n-6e Frazier, Carter Oil 1.
4-9n-6e Davis, Carter Oil 1.
10-9n-6e Noble, Superior Oil 1.
14-9n-6e Rentie, Mid-Cont. Pet. 1.
15-9n-6e Johnson, Gypsy Oil 1. Noble, Tidal Oil 1.
22-9n-6e Harjo, Kingwood Oil 1.
23-9n-6e Fixico, Amerada Pet. 1, 2. Killingsworth "A", Amerada Pet. 1. F. Carter, Carter Oil 1, 2. Grisso, Carter Oil 1. Harjo, I. T. I. Oil 1. Harjo, Tidal Oil 1, 2.
24-9n-6e Carter, Barnsdall Oil 2, 4, 5, 6. Reed, Barnsdall Oil 1, 2. J. Carter, Carter Oil 1, 2, 3. B. Carter, Carter Oil 1. Carter, Gypsy Oil 2, 3, 4, 5. James, I. T. I. Oil 2, 7, 1. Reed, I. T. I. Oil 8. Tayoche, Mid-Cont. Pet. 2, 3, 4. Mahardy, Tidal Oil 1, 2, 3, 4. J. Carter, Tidal Oil 1, 2, 3.
25-9n-6e Franks, Magnolia Pet. 1. Wilkins, Mid-Kansas Oil 1. Tayoche, Tidal Oil 1, 2.
26-9n-6e Fixico, Gypsy Oil 1, 2, 3, 4, 5. J. Wolfe, Gypsy Oil 1, 2, 3. Fixico, Independent & Garland 2, 3, 4, 5, 6. L. Jones, Independent & Inter-Ocean 1, 2, 3. Bowlegs, I. T. I. Oil 1, 2, 3. Strother, Pure Oil 1, 2, 3, 4, 5, 6, 7. Fixico, Tidal Oil 1, 2, 3, 4, 5, 6.
27-9n-6e Lukes, Carter Oil 1.
34-9n-6e Cudjo, Amerada Pet. 1. Strother, Carter Oil 1.
35-9n-6e Cudjo, Superior Oil 1. Cudjo "A", Sinclair Oil 1. Cudjo "B", Sinclair Oil 1. Franks, T. B. Slick 1.
36-9n-6e Frazee, Gypsy Oil 1.
15-9n-7e Jonah, Pure Oil 1.
17-9n-7e Warrior, Sinclair Oil 1.
18-9n-7e Drewry, Magnolia Pet. 1.
20-9n-7e Pepper, Magnolia Pet. 1.
21-9n-7e Island, Gypsy & Phillips 1.
7-9n-8e McDaniel, Independent O. & G. 2. Kidd, Independent, Holm & Jarvis 1. Cully, Mid-Cont. Pet. et al 2. McDaniel, Plover Drlg. Co. 3, 4. Alexander, T. B. Slick 2, 3. Ada, Plover Drlg. Co. 1.
18-9n-8e Peters, Southwestern Pet. 3, 5. Smith, Winona Oil 2.
5-8n-6e Seminole, Gypsy Oil 1.
13-8n-6e Harjo, I. T. I. Oil 1.
15-8n-6e Walker, Gypsy Oil 1.
17-8n-6e Strother, Magnolia Pet. 1.
26-8n-6e Sewell, I. T. I. Oil 1.
31-8n-6e Pullatka, Superior Oil 1.
33-8n-6e Brown, Gypsy Oil 1.
10-8n-7e Davis, Carter Oil 1.
14-8n-7e Jackson, T. B. Slick 4.
23-8n-7e Hanning, Magnolia Pet. 3.
25-8n-7e Carter, Magnolia Pet. 1.
26-8n-7e Ramsey-Jackson, Magnolia Pet. 1.
28-8n-7e Knight, Magnolia Pet. 1.
9-8n-8e Miller, T. Atkins et al 1.
15-8n-8e Sewell, Champlin & Bass 1.
27-8n-8e Carolina, Magnolia Pet. 1.
31-8n-8e Willis, Carter Oil & Boggs 6. Amos, W. R. Ramsey 6. Salinda, W. R. Ramsey 6, 7.
32-8n-8e Grayson, Amerada Pet. 2. J. Long, Dixie Oil 4 "A". J. Long, Dixie Oil 4 "B". E. Parker, Dixie Oil 3. D. A. Long, Independent & Atlantic 4. W. J. Long, Independent & Atlantic 2, 4.
32-8n-8e Jones, Magnolia Pet. 5. E. Parker, Magnolia Pet. 3. R. Jones, Shaffer O. & R. 8.
33-8n-8e L. R. Scott, Magnolia Pet. 4.
1-7n-6e Dickson, I. T. I. Oil 1.
3-7-n-6e Litka, Empire G. & F. 1.
22-7n-7e Jackson, Magnolia Pet. 1. Davis, Transcontinental Oil 2.
5-7n-8e Simon, Independent & Atlantic Oil 4.
6-7n-8e Knight "C", Dixie Oil 4. Carolina, Homaokla Oil 5. Hawkins, Magnolia Pet. 2. Davis, Magnolia Pet. 5.
33-6n-6e Charty, Palmetto Oil 1.
5-6n-7e Vierson, Magnolia Pet. 1.
24-5n-5e Nitley, Riverside O. & R. & Kinney 1.

Shut Down

33-10-6e Youngblood, Searight et al 2.
35-10-6e Harjo, Carter Oil 1.
8-10-8e Deere, Devonian Oil 2.
34-9n-6e Jones, Barnsdall Oil 1.
8-9n-8e Buckner, Holm & Jarvis & Atlantic 1.
15-8n-6e Gofoth, I. T. I. Oil 2. Livingston, I. T. I. Oil 1.
14-8n-7e Rodman, Magnolia Pet. 1. Jackson, T. B. Slick 3.
29-8n-8e Walker, Magnolia Pet. 3.
32-8n-8e Grayson, Amerada Pet. 3, 4. Long "B", Dixie Oil 2. W. J. Long, Independent & Continental 3.
9-7n-6e Litka, I. T. I. Oil 1.
6-7n-8e Harbor, Magnolia Pet. 2.
6-6n-8e Reed, Hoffer Oil 1.
Rigs, 64; well drilling, 195; total 259.

OKFUSKEE COUNTY

Rigs

8-12-7e Rogers, Cromwell O. & G. 1.
10-13-10 Deere, E. R. Black Oil 1.
25-12-9e Leedy, T. A. Johnson 1.
2-12-11 Sullivan, J. J. Deaner 1.
3-12-11 Morgan, Barnsdall Oil 4.
10-12-11 Randall, Barnsdall Oil 4.
35-11-9e Wind, Gilcrease Oil 2.
10-12-11 Hooks, Prairie O. & G. 1.

Wells Drilling

26-11-9e Collins, Prairie O. & G. 1.
23-13-7e Byrd, Sinclair Oil 1.
13-13-8e Wilson, Peerless O. & R. 1.
15-13-8e Scott, Bingham & Smith 1.
16-13-8e Polly Harjo, Magnolia Pet. 1.
18-13-8e Ford, Amerada & Barnsdall 1.
17-12-7e Hennechuchee, Mid-Kansas Oil 1-A.
14-13-9e Callahan, Derby Pet. 2.
17-13-10 Manwaring, Darby Pet. et al 1.
12-12-10 Cindan, Independent O. & G. 1.
3-12-11 Morgan, McMahon Oil 2.
8-12-11 Scott, J. M. Kessler 1.
13-12-11 Sugar, Independent O. & G. 13.
28-12-11 Unallotted, Josey Oil 1.
32-12-11 Hulsey, Josey Oil 4.
33-12-11 McCoy, Josey Oil 13, 15.
3-11-9e Henderson, Lenox Oil 1.
35-11-9e Harjo, Gypsy Oil 2.
36-11-9e Buck, Amerada Pet. 1. Mecco, Sinclair Oil 2.
14-11-10 Buckley, Terrien & Balliere 1-A.
14-11-11 Ingram, Champlin Refg. Co. 1.
15-11-11 Jacobs, Champlin Refg. Co. 4.
19-11-11 Barnett, Riverland Oil 1.
23-11-11 Unallotted, Carter Oil 1. Likowski, J. J. Deaner 1-A.
25-11-11 Barnett, Carter Oil 2.
36-11-11 Holmes, W. L. Umburn 1.
2-10-9e Deer, E. L. Robinson 1.
16-10-9e Bruner, Independent O. & G. 1.
17-10-9e Carolina, McCulloch Oil 1.
33-10-9e Barnett, Arkansas Fuel Oil 2.
15-10-10 Canard, Norbeer Drlg. Co. 1.
26-10-10 Butler, Schrock & Jameson 1.
18-10-11 Simmer, Amerada Pet. 1.
19-10-11 Lockhart, Morgan, Flynn & Roxana 1.

Shut Down

7-13-10 Micco, L. E. Cooper & R. D. Donnelly 1.
8-12-10 Yarhola, Blakely et al 1.
23-12-10 Harjo, Blakely et al 1.
4-11-10 Stidham, Moose & Daniels 1.
11-10-11 Hill, Lou Umburn 1.
7-10-12 Birdcreek, Eagle Picher Lead Co. 3.
Rigs, 8; wells drilling, 43; total, 51.

HUGHES COUNTY

Rigs

1-9n-9e Cain, Minnehoma Oil 4.

Wells Drilling

13-9n-8e Paldon, Johnson, Ashe et al 1.
1-9n-9e Bruner, Independent & Atlantic 4.
3-9n-9e W. Alexander, Mid-Continent Pet. 13.
4-9n-9e Tiger, Foster Oil 3.
26-9n-9e Davis, Independent O. & G. 4, 5. Harjo, Transcontinental Oil 6, 8, 10, 11.
35-9n-9e Powell, Roxana Pet. 1.
24-9n-10 Barnett, Roxana Pet. 1.
3-8n-9e Harjo, Champlin & Bass 1.
10-8n-9e Harnage, Sands Pet. Co. 1.
13-8n-9e Long, Noble O. & G. 1.
22-8n-9e Long, McCulloch Oil 1.
28-8n-9e Meadors, Magnolia Pet. 1.
17-8n-10 Cornelius, Dixie Oil 1. Carter, Robinson & Amerada Pet. 1.
21-8n-10 Hamphill, Burk Greis Oil 1.
4-8n-11 Wallace, Sory & Swartz 1.
32-8n-11 Bear, Johnson & Ashe et al 1.
5-7n-8e Frederick, Amerada Pet. 10, 10-A. M. Garner, Dixie Oil 9. M. Garner, Dixie Oil 7, 8. Foster, Independent & Sinclair 1. Frederick, Magnolia Pet. 2.
29-7n-8e Harjo, Magnolia Pet. 1.
2-6n-8e Hardage, Humble O. & R. 1.

Shut Down

24-9n-8e Culver, T. Atkins et al 1.
26-9n-9e A. Proctor, Independent & Darby Pet. 1.
27-9n-9e C. Long, Gypsy Oil 2.
28-8n-9e J. Redd, Independent & Margay 1.
29-8n-9e McCray, Magnolia Pet. 1.
18-8n-10 Diamond "A", Dixie Oil 2.
Diamond "C", Dixie Oil 3.
5-7n-8e Frederick, Amerada Pet. 12.
Garner, Humble O. & R. 2.
8-6n-10 Kite, Walton, Snyder & Marshall 1.

Rigs, 1; wells drilling, 41; total, 42.

MUSKOGEE & WAGONER COUNTIES

Rigs

6-17-15 Kelly, Tobasco Oil 3.
12-17-15 Haynes, Eastern Okla. Oil 1.
31-16-18 McIntosh, J. W. Hale et al 1.
30-15-15 Vanderslice, Culp et al 6.
Durant, Jack Summers 1.
31-15-15 Drew, E. A. Hutchinson et al 6.
33-15-15 Jefferson, Future Dev. Co. 1.
1-15-16 Harrison, J. O. Tilley 1.
17-15-17 Sango, W. R. Sommerville 1.
28-14-16 Brown, Jolly-Ogg Oil 1-A.
5-14-19 Crittenden, C. M. Bradley 3.

Wells Drilling

28-18-17 Childers, R. M. Lear 1.
6-17-16 Overton, Pat Boyles 2.
19-17-16 Bruner, W. A. Martin 2.
36-17-16 Bruner, M. E. Johnson 1.
20-17-17 Perryman, J. F. Blackwood et al 4.
30-16-15 Grayson, Montgomery et al 9.
35-16-17 Marshall, Denton & Marshall 1.
19-16-19 Nave, Mission Oil & F. W. Isett 1.
29-15-15 Morris, Corry & Anders 1.
30-15-15 Vanderslice, Culp et al 5.
1-14-17 Sango, T-O Pet. Co. 7.
28-14-17 Dean, E. C. Dooley et al 2.
5-14-19 Goodrich, C. M. Bradley 3.
16-14-19 Cympton, C. M. Bradley 1.
14-13-18 Foreman, Herbert Oil 1.
17-13-19 Lowther, Herbert Oil 1.
18-13-19 Smith, Howard & Murphy 1.
3-11-20 Shoemade, D. C. Lampton 1.

Shut Down

6-18-18 Bruner, R. E. Stewart et al 1.
19-17-18 Bradley, J. Nealey 3.
18-14-17 James, Peterson et al 6.
2-14-19 Wade, C. M. Bradley 1.
20-13-16 London, Boomer Oil 1.

Rigs, 11; wells drilling, 23; total, 34.

CREEK COUNTY

Rigs

5-18-7e Dale, The Texas Company 31.
32-18-7e Derrisaw, Magnolia Pet. 6.
Drumright, Shaffer O. & R. 6.
14-17-8e Freeman, Alvard & West 3.
23-16-8e Jones, T. B. Slick 1.
——, T. C. M. Oil 1.
20-15-8e Beaver, Skelly Oil 1-A.
25-15-8e Elder Yarhola, The Texas Company 3.
30-15-8e Lewis, Magnolia Pet. 4.
1-19-9e Tutrell, National Ref. Co. 1.
7-19-9e Tahkaney, Dixie Oil 1.
17-19-9e Murrell, Mid-West & Gulf 2.
33-19-9e Atkins, Olean Pet. 1.
34-19-9e Derrisaw, Smith & Mann 1.
3-18-10 Deere, Smith & Hanlon 1.
22-18-11 Unallotted, W. J. Cole 1.
32-18-11 Milla, Crandall & Murta 1.
6-18-12 Townlot, Day Bros. 1.
Sango, Sunray Oil 9.
11-18-12 Bigpond, W. J. Sherry et al 1-A.
1-17-9e Drew, McCulloch Oil 1.
10-17-9e Bruce, Roxana Pet. 3.
Lindsey, Wilcox O. & G. 2.
8-17-10 Pemberton, Nowata & Independent 2.
24-17-10 Bucktrot, Pioneer Pet. 11, 12.
Dawson, J. H. Wright 13.
Tahkaney, H. W. Wright 11.
30-17-10 Sneed, Independent O. & G. 2.
16-17-11 Broadnox, Misener & Reesman 2, 3.
7-16-9e Sango, W. R. Davis 1.
21-16-9e Hendrickson, Jackson & Wise 3.
32-16-9e Vaughn, Graham Oil 1.
4-16-12 Berryhill, Future Dev. Co. 1.
30-15-9e Unallotted, C. G. Tibbens 32, 34.
16-14-10 Tiger, Atlantic O. P. 3.
29-14-10 Scott, C. F. Noble 1.

Wells Drilling

21-17-7e Litchfield, Prairie O. & G. 40.
5-18-7e Rector, Prairie O. & G. 52.
3-19-8e Walker, Mannford Dev. Co. 1.
5-19-8e Noble, Bartlett & Mann 3.
13-19-8e Peters, Gled Oil 1.
Peters, Burlengane & Sharp 7, 10, 11, 12.
Ross, Gled Oil 5.
Weaver, The Texas Company 3.
14-19-8e Miller, Devonian Oil 6.
24-19-8e Grayson, Grieves Oil 1.
1-18-7e Jack, Burnett et al 1.
5-18-7e Atkins, Sand Springs Home 26.
8-18-7e Yarhola, Riverside O. & R. 1.
Klein, Silurian Oil 27.
26-18-7e Jones, Shaffer O. & R. 1.
32-18-7e Drumright, Shaffer O. & R. 11.
35-18-7e Jones, Magnolia Pet. 2.
5-18-8e Perryman, New England O. & P. L. 1.
30-18-8e Holman, J. O. Walters et al 1.
4-17-7e Richards, Tidal Oil 20.
9-17-7e Wiley, Magnolia Pet. 1.
14-17-7e Artussee, Mid-Cont. Pet. 10.
15-17-7e Stewart, Mid-Cont. Pet. 3, 27, 28.
22-17-7e Fife, Tidal Oil 4.
16-17-8e Morrison, Shaffer O. & R. 1.
20-17-8e Scruggs, Devonian & Billingslea 1.
——, Transcontinental Oil 1.
21-17-8e Scruggs, Burk Greis & Darby Pet. 1, 2.
Scruggs, Devonian Oil 1.
Kano, The Texas Company & Transcontinental 1.
22-17-8e Johnson, Savoy Oil 7.
24-17-8e Green, Lima O. & G. 4.
27-17-8e Alec, Barnsdall Oil 1.
Bruner, Southwestern Pet. 3.
5-16-8e Roberts, Olean Pet. 7.
9-16-8e Myers, Red Bank Oil 6.
21-16-8e Johnson, Tidal Oil 3.
23-16-8e Scott, Inter-Ocean Oil 5.
6-15-7e Wattie, Magnolia Pet. 1.
Steele, Pure Oil 2.
21-15-7e Hayne, Barnsdall Oil 1.
36-15-7e Bigpond, Olean Pet. 1.
30-15-8e Benjamin, Lima O. & G. 2.
11-14-8e White, Adlec Oil 4.
17-14-8e Cooper, Shaffer O. & R. Co. 1.
24-14-8e Bear, C. G. Tibbens 1.
26-14-8e Johnson, The Texas Company 5.
30-14-8e McGilbray, Black Gold Oil 1-A.
7-19-9e Lewis, C. L. McMahon 1.
18-19-9e Clark, Roxana Pet. 1.
28-19-9e Boyd, Bartlett Dev. Co. 1.
19-18-9e Sherman, H. U. Bartlett 1.
8-18-10 Fields, H. Sparks et al 1.
31-18-10 Sacwanshee, White Eagle & Madden 1.
1-18-11 Richards, Gypsy Oil 14, 15.
Land, Riverland Oil 2-A, 3.
2-18-11 Sherrill, Sheridan Oil 3.
3-18-11 Leader, Gypsy Oil 4.
4-18-11 Lively, McCulloch Oil 1-A.
5-18-11 Eufaula, Holmes et al 1.
9-18-11 Jack, Twin State Oil 8.
15-18-11 Snow, Redgraves et al 1.
4-18-12 Saunders, Devonian Oil 1.
5-18-12 Grayson, Curtis Oil 2.
6-18-12 Townlot, Day Bros. 3.
9-18-12 Yellowhead, C. G. Tibbens 9.
3-17-9e Chisholm, Harwell Oil 2.
Simmons, The Texas Company 5.
14-17-9e Smith, G. & M. Oil 1.
21-17-9e Charcotenne, Wood & Farren 4.
2-17-10 Self, Arnold et al 1.
5-17-10 Francis, Dixie Oil 1.
Francis, Independent O. & G. 1.
8-17-10 Pemberton, W. S. Turman 1.
10-17-10 Hay, O. P. Storee 1.
11-17-10 Smith, O. M. Ireland 1.
13-17-10 Joconton, McCulloch Oil 1.
Fulson, Pontiac Oil 1.
Brink, Ted-Ray Oil 1.
16-17--0 Thomas, O. P. Stover 1.
23-17-10 Holden, Kirschner 3.
24-17-10 Dawson, Mid-Cont. Pet. 4.
32-17-10 Yellowhead, Skelly Oil 2.
35-17-10 Bucktrot, Hiram O. & G. 1.
3-17-11 Fife, S. J. Smith 4.
8-17-11 Freeman, O. M. Ireland 7.
30-17-11 Garald & Nichols, M. W. Evans 1.
7-17-12 Pittman, Gypsy Oil 37.
21-16-9e Hendrickson, Lover & Myers 1-A.
33-16-9e Vaughn, O'Rourke et al 2.
36-16-9e Allen, Williams & Bell 1.
1-16-11 Anthis, Wilcox O. & G. 6.
20-15-9e Montgomery, C. G. Tibbens 1.
30-15-9e Unallotted, C. G. Tibbens 31, 33.
31-15-9e Lucas, C. G. Tibbens 3.
Posey, C. G. Tibbens 1-B.
32-15-9e Drake, C. G. Tibbens 1.
6-15-10 Allen, Rolland Oil 1.
27-15-10 Frank, Buckholtz & Norman 1.
36-15-10 Rogers, Scruggs & Carter Oil 1.
8-14-9e Barnett, C. G. Tibbens 1.
36-14-9e Lampkins, Wood Oil 1.
4-14-10 Harry, Mid-Cont. Pet. 2.
11-14-10 Webb, H. George et al 1.
20-14-10 Knight, Hall & Donnelly 2.
25-14-10 Settle, Chief Drlg. Co. & Independent O. & G. 1.
32-14-10 Jones, T. B. Slick 2.
Doyle, T. B. Slick 1.

Shut Down

11-17-8e Watson, Bu-Vi-Bar Pet. 1.
22-17-8e Johnson, Savoy Oil 6.
23-19-11 Arch, Sand Springs Home 1.
27-18-10 Allen, Vaughn & Wheeler 1.
14-18-11 Tiger, O. N. White 1-A.
18-18-11 Bruner, Posey Short et al 2.
32-18-11 Frews, Cross et al 1.
5-18-12 Sizemore, Henson 2.
22-17-9e Harjoche, T. P. C. & O. Co. 2.
20-17-10 Wiley, F. C. Adams 2.
24-17-10 Tahkaney, H. W. Wright 11.
1-15-10 Ashbury, H. C. Wilson 1.

Rigs, 39; wells drilling, 129; total, 168.

PAWNEE COUNTY

Rigs

22-23-4e Zoldoskie, Donahue & Carter Oil 4.
23-21-7e Bailey, J. H. Markham 2.
24-21-7e Mullendore, Minnehoma Oil 4.
33-20-5e Moebius, Marland & Mid-Cont. Pet. 3.
36-20-6e School land, Riverside O. & R. 1.
7-20-8e Childers, Minnehoma & Sheltz 4.
10-20-8e Mullendore, Sinclair Oil 12.

Wells Drilling

10-20-9e McNeal, Prairie O. & G. 7.
18-20-10 Black, B. E. Kennedy 1.
13-20-9e Fender, Industrial O. & G. 1.
30-23-3e Gilbert, Magnolia Pet. 1.
33-23-3e Miller, Watchorn O. & G. 16.
27-23-4e Brian, J. L. Donahue 1-A.
26-22-5e Redd, Bu-Vi-Bar Pet. 1.
21-22-7e Canfield, Arkansas Fuel Oil 2.
22-22-7e ——, Victor Oil 1.
16-21-6e School land, 101 Ranch Oil 1.
16-21-7e School land, Ed Reese et al 1.
23-21-7e Bailey, J. H. Markham 6.
31-21-8e Havercamp, J. B. Grieves 5.
32-21-8e Sigon, Adamson C. O. & G. 8.
6-20-5e Babcock, Stacey & Vaughn 1.
20-20-5e Goodchief, Champlin Refg. Co. 1.
28-20-5e Williamson, Magnolia Pet. 1.
32-20-5e Berry, Magnolia Pet. 2.
33-20-5e Pollock, Gypsy Oil 4.
School land "F", Marland & Mid-Cont. Pet. 1.
School land "Miner", Marland & Mid-Cont. Pet. 1.
9-20-6e Fugate, Magnolia Pet. 3.
10-20-6e Wilson, Privett Drlg. Co. 1.
15-20-6e Platt, Shaffer O. & R. Co. 2.
16-20-6e Burgman, Jim Glenn Oil 4.
21-20-6e Freeman, Josey Oil 6.
16-20-7e School land, Mid-Cont. Pet. 22, 23.
27-20-7e Reigle, Smith & Steinberger 1-A.
34-20-7e Allender, Ryan Consolidated Oil 4.
3-20-8e Arnold, Tidal Oil 10.
4-20-8e Armstrong, Gypsy Oil 1.
7-20-8e Marlin, Sheltz et al 3.
10-20-8e Brentenall, Sinclair Oil 17.
Mullendore, Sinclair Oil 11.
9-223e Arkeketa, Magnolia Pet. 3.
10-22-3e Tucker, Magnolia Pet. 1.

Shut Down

33-20-5e Pillock, Gypsy Oil 3.
28-20-6e White, Davis Drlg. Co. 1.
4-20-7e Hallett Townsite, W. A. McCabe et al 1.
11-20-7e Rogers, Block & Carnahan 1-A.

Rigs, 7; wells drilling, 41; total, 48.

KAY COUNTY

Rigs

17-29-1e Brokhouser, Vernon O. & G. 5.
16-29-1w Brown, Comar Oil 2-W, 3-W.
21-29-1w Harvell, Comar Oil 10-W.
5-28-1w Bechtel, Comar Oil 2-W.
McCullough, Comar Oil 1-W.
28-28-2e Huddleston, John Stark et al 1.
1-26-2w Richmond, Marland Oil 1-B.
6-26-1w North, Marland Oil 1.
North No. 3, Marland & Phillips 1.
21-29-1w Duncan, Comar Oil 6.
15-27-1w Skelton, Hope Oil 1.

Wells Drilling

1-26-2w Smith "A", Prairie O. & G. 4.
20-29-5e Choteau, Bu-Vi-Bar Pet. 1.
15-29-1w Hanzel, Harris & Hahn 1.
16-29-1w Brown, Comar Oil 1-W.
School land, Mid-Cont. Pet. 3, 4.
20-29-1w Day, Comar Oil 2, 3-W.
Day, The Texas Company 2, 4, 5.
21-29-1w Priboth, Comar Oil 8-W, 11-W.
Harvell, Comar Oil 5-W, 6-W, 8, 9.
22-29-1w Frost, Gypsy Oil 2.
28-29-1w Bixby, Comar Oil 1.
29-29-1w Judd, Comar Oil 1.
16-29-1e School land No. 11, Wentz Oil 2.
17-29-1e Dickerson, Marland Oil 2, 3.
Brokhouser, Vernon O. & G. 2.
20-29-1e Bradley, Carter Oil & Ona 2.
25-29-1e Smith, Strosynder et al 1.
5-28-1w Townsite, Braman Oil 1.
McCullough, Comar Oil 5.
Bechtel, Comar Oil 7.
8-28-1w Horne, Comar Oil 2-W.
Andrews, Wentz Oil 1.
27-28-1w Walker, Simms Pet. 1.
35-28-3e Coleman, Ingram & Wilson 2.
4-27-1w Case, Polling & Denny 5.
5-27-1w Jameson, Blackwell O. & G. 3, 4.
8-27-1w Boggs, Tidal Oil 2.
9-27-1w Geiger, Blackwell O. & G. 6-A.
Burkholder, Polling & Denny 4.
19-27-1w Gaylor, Marland Oil 1-A.
31-27-1w Cade, Marland Oil 1.
3-27-2e Balzar, Mississippi Valley Oil 2.
26-27-2e Harper, Mummert et al 1.
1-27-3e Robinson, Geo. Miller 1.
12-26-2w McCullough, Marland 2.
28-26-1w Barclay, Tom Palmer et al 1.
21-26-1e Keathley, A. D. Morton et al 1.
32-26-2e McNeal, Ponca Lee Oil 1.
15-25-2w Thomas, Marland Oil 2.
15-25-1w McDaniel, Tonkawa Dev. Co. 1.
21-25-1w Coyle, Philmack Oil 1.
28-25-1w Llegarat, Barnsdall Oil 1, 2, 3, 4.
Gardner, Gypsy Oil 2, 3, 4.
Becker, Skelly Oil 2, 3, 4.
Siler, T. B. Slick 1.
Siler, The Texas Company 3, 4.
Mahoney, Wentz Oil 11, 12, 13, 15.
32-25-1w Goodson, Gypsy Oil 1.
33-25-1w Tonkawa, Gypsy Oil 1.
35-25-1w Endicott, T. B. Slick 7, 1-E.
17-25-2e Arrow, Marland Oil 10-A.
18-25-2e Walingsly, Marland Oil 1.

Shut Down

21-29-1w Priboth, Comar Oil 2.
30-28-2w Smith, Mississippi Valley Oil 1.
5-28-1w Biddle, Comar Oil 6-W.
5-28-1w Orr, Comar Oil 1, 3-W.
8-28-1w Horne, Comar Oil 3.
36-28-1w School land, Dewey & Hoffer 1.
6-28-1e Wolfe, McComas et al 1.
11-28-1e Lowery, Oklahoma Noarhter O. & G. 1.
4-27-1w Kelly, Arkansas Fuel Oil 6.
Moore, Schouwald et al 1.
9-27-1w Burkholder, The Texas Company 2.
16-27-1w Slocum, Anolu Oil 3.
Barr, Manahan et al 2.
12-26-2w North, Marland Oil 4.
6-26-1w Glasgow, National Union Oil 1.
4-25-2e Foureyes, Marland Oil 10-A.

Rigs, 12; wells drilling, 91; total, 103.

GRANT COUNTY

Rigs

24-27-3w Birdston, Burns & Beasley 1.

Wells Drilling

18-29-3w Atkinson, Mississippi Valley Oil 1.
19-28-3w Lehrigg, Wrightsman Oil 1.
36-28-3w School land, Marland Oil 1.
6-27-3w Barnard, Flannigan & Dedman 1.
22-27-3w Lane, Blackwell O. & G. 2.
33-26-3w Muegee, Gypsy Oil 1.
22-25-4w Vallner, Cowden 2.

Shut Down

6-28-3w Snyder, Otstot Dev. 1.
14-27-3w Howell, Western States Oil 1.
23-27-3w Flood, Larutan Fuel Co. 1.
34-26-4w Royce, Brazill & Moses 1.
16-26-3w Sherrer, Flanningan & Dedman 1.

Rigs, 1; wells drilling, 12; total, 13.

PAYNE COUNTY

Rigs

32-18-3e Widdows, B. G. Gloyd et al 1.
32-18-4e Ballard, Mulberry Oil 3.
Ballard, Skelly Oil 3.
5-17-4e Sharrum, Mulberry Oil 4.
Sharrum, Shaffer O. & R. 4.

Wells Drilling

4-19-1w Kinneman, Reiter-Foster Oil 1.
12-19-1w Combs, Tidal Oil 1.
3-19-3e Hall, Mid-Cont. Pet. 1.
5-19-5e Martin, Magnolia Pet. 1.
8-19-5e Garr, Magnolia Pet. 5.
E. Hughes, Magnolia Pet. 1.
Hughes, Magnolia Pet. 1.
13-19-5e Crockett, Sinclair Oil 12.
15-19-5e Moore, Twin State Oil 1.
36-19-5e Lond, Josey Oil 5.
Laughlin, Josep Oil 12.
23-18-1e Tilber, Twin State Oil 1.
23-18-3e Boyles, Deep Rock O. & G. 4.
Shannon, Deep Rock O. & G. 2.
26-18-3e Barth, Deep Rock O. & G. 5.
Liston, Empire G. & F. 5, 6.
26-18-3e Waltman, T. C. M. Oil 3, 5, 6.
31-18-4e Thomas, Magnolia Pet. 1.
7-18-5e Blue, Marland Oil 3.
8-18-6e Welch, Consolidated Drlg. Co. 1-A.
5-17-4e Sharrum, Mulberry Oil 5.
6-17-4e Payne, Magnolia Pet. 1.
3-17-5e Sawrtout, Shaffer O. & R. 1.

Shut Down

21-19-1w Lewis, Ponca O. & G. 1.
10-19-5e Mullins, Pure Oil 2.
1-18-5e Laughlin, Josey Oil 4.

Rigs, 5; wells drilling, 29; total, 34.

LINCOLN COUNTY

Rigs

27-15-6e Foster, J. A. Hull Oil 1.

Wells Drilling

8-15-6e Selby, Prairie O. & G. 1.
35-14-6e White, Prairie O. & G. 1.
34-17-2e Lukenbeal, Wentz Oil 1.
34-17-3e Swaggart, Mote et al 1.
31-17-4e Scott, Roxana Pet. 1.
33-17-4e Griswald, Mid-Kansas O. & G. 1.
30-17-5e West, Carter Oil 1.
31-17-5e Cook, Shaffer O. & R. 1.
18-16-4e Morris, Olean Pet. 1.
6-16-5e Van Camp, T. C. & O. Co. 1.
25-15-3e Lillibridge, Wilcox O. & G. 1.
8-15-6e Hopewell, Gypsy Oil 1.
Owens, Magnolia Pet. 3, 4.
Earp, Mid-Cont. Pet. 8, 9.
16-15-6e School land, Sinclair Oil 1.
34-15-6e Hemming, Amerada, Madden & Madden 1.
3-14-5e Belless, Magnolia Pet. 5.
9-14-5e Ritchie, Magnolia Pet. 1.
10-14-5e Davenport Townsite, Magnolia Pet. 1.
21-14-5e Love, Pure Oil 1.
22-14-5e Craig, The Texas Company 1.
27-14-5e Garrett, Sinclair Oil 1.
9-14-6e Teter, Mid-Cont. Pet. 1.
16-13-5e School land, Amerada Pet. 1.
1-12-5e Thompson, Independent & McCulloch 1.
8-12-5e Richardson, Barnsdall Oil 1.
13-12-6e Strip, Mid-Cont. Pet. 1.

Shut Down

16-15-4e School land, Empire G. & F. 1.

Rigs, 1; wells drilling, 30; total, 31.

GARFIELD COUNTY

Rigs

24-24-3w Disney, Failing & Lawson 1.
13-22-4w Walker (N), Sinclair Oil 65.
18-22-3w Schroeder, Roxana Pet. 10-T.
Hartley, Sinclair Oil 52, 53.
24-22-4w Belveal, Healdton Pet. 34.

Wells Drilling

1-22-4w Johnson, Prairie O. & G. 2.
22-24-6w Zalondek, Wilcox O. & G. 1.
32-24-4w Brumkin, Shaffer-Gardner 1.
34-24-3w Reed, Roxana Pet. 1.
6-23-4w Cheveller, Haley, Garber & Pulse 1.
29-23-4w Bunker, Roxana Pet. 1.
31-23-4w Johnson, Bu-Vi-Bar Pet. 1.
19-23-5w Garber, Marland Oil 1.
1-22-4w Seaman, Cowen et al 4.
13-22-4w School land, Mid-Cont. Pet. & Marland 46, 65.
Walker (N), Sinclair Oil 43, 46, 62, 63, 64.
14-22-4w Dively, Sinclair Oil 5.
36-22-4w Ed Kisner, Sinclair Oil 8.
18-22-3w Schroeder, Roxana Pet. 28, 11-L, 9-T.
Hartley, Sinclair Oil 4, 39, 40, 46, 51.
19-22-3w Crews, (N), Sinclair Oil 16.
Kisner (E), Sinclair Oil 18.
Kisner (W), Sinclair Oil 12, 31, 33, 36, 37.
30-22-3w Windler, Sinclair Oil 11.
31-22-3w McLean, Chas. Knox 4.
12-21-5w Smith, Tidal Oil 1.
5-21-3w Cain, Penders Pet. 2.
6-21-3w Woods, Imo Oil 1.
22-21-3w Detwiler, Slick, Harrington et al 1.
7-20-6w Semrad, O. O. Owens 1.
2-20-5w Fee, Sinclair Oil 1.
9-20-4w Looman, Marland Oil 1.
12-20-4w Miller, Marland Oil 1.

Shut Down

10-24-4w Meyers, Sinclair Oil 1
14-24-3w Gorusch, Sagar Oil 1.
3-22-5w Swinery, Ashby & Barr 1.
13-22-4w Walker (N), Sinclair Oil 6, 29-A.
24-22-4w Belveal, Sinclair Oil 21.
7-22-3w Lynds, Branchott 3.
18-22-3w Schroeder, Roxana Pet. 13-W.
Hartley, Sinclair Oil 26, 37, 48.
19-22-3w Kisner (E), Sinclair Oil 15.
2-21-7w Montgomery, Frank Frantz 1.
31-21-5w Vanderwork, E. A. Summers 1.
12-21-4w Schriver, Beople et al 1.
9-21-3w Bowers, Penders Pet. 1.
13-20-4w Faramel, Summers et al 1.

Rigs, 6; wells drilling, 60; total, 66.

NOBLE COUNTY

Rigs

15-21-2w Sams, Magnolia Pet. 1.

Wells Drilling

22-21-2w Ableidinger, Prairie O. & G. 1.
18-24-2w Coulter, D. W. Moore et al 1.
16-24-1w School land, Mid-Cont. & Marland 13.
1-24-1e 101 Ranch, George Miller 1.
22-23-2w Brumfield, Mid Co. Pet. 15.
1-22-2w White, K-D Oil 3.
18-22-2w Pfrimmer, Hartman & Skaer 1.

Shut Down

16-24-1w School land, Mid-Cont. Pet. & Marland 12.
29-24-1w Reed, Mid Co. Pet. 6.
1-22-2w Stephenson, K-D Oil 1.
16-21-2w Treman, Red Bank Oil 1.
7-21-1w Williams, R. L. Corley 1.

Rigs, 1; wells drilling, 12; total, 13.

POTTAWATOMIE COUNTY

Rigs

14-7n-4e Risenhoover, Magnolia Pet. 1.
15-7n-4e Mull, Magnolia Pet. 1.

Wells Drilling

26-11-4e Kline, Sikes, Kilgore & Shaffer 1.
16-9n-5e School land, Gypsy Oil 1.
3-8n-4e Kenyon, Tidal Osage Oil 1.
11-7n-4e Hathcock, Magnolia Pet. 1.
15-7n-4e Standridge, Derby Oil 1.
20-7n-5e Fyke, Magnolia Pet. 1
10-6n-2e McGahey, Davis Detrick et al 1.
20-6n-4e Hibbard, Croxton Wrightsman et al 1.

Shut Down

12-10-3e Ives, Sikes, Kilgore & Shaffer 1.
25-10-4e Madgett, McCulloch Oil 1.
28-10-4e Toney, Central Natl. Oil 1.
16-10-5e School land, Clark Edwards et al 1.
19-7n-4e Talley, Pierce Oil 1.

Rigs, 2; wells drilling, 13; total, 15.

GRADY COUNTY

Rigs

31-10-8w Thompson, Hawkins & Young 1.
13-7n-5w Kemp, Bedner et al 1.
18-5n-8w Stewart, Peters, Williams & Harris 1.
23-5n-8w Edmundson, Skelly Oil 5.
McCaughtry, Strogner et al 8.
26-5n-8w Farwell, Nichlos O. & D. Co. 8.
11-4n-8w Rockhill, Magnolia Pet. 3-A.
6-3n-5w Sledge, Amerada Pet. & W. H. Gant 1.
21-3n-5w Russell, Carter Oil 1.
27-3n-5w Erwin-Polson, Magnolia Pet. 2.
28-3n-5w Wilde, Joe Anderson 1-A.
34-3n-5w Wham, Carter Oil 1.
10-9n-5w Baker, Travis et al 1.

Wells Drilling

21-8n-7w Webb, Watchorn O. & G. 1.
27-5n-8w Chandler, Nichlos O. & D. Co. 3.
10-5n-7w Kleeman, Badgett & Hughes 1.
19-5n-7w Thomas, Gant & Arrowsmith 1-A.
11-4n-8w Smith, Magnolia Pet. 2.
31-4n-5w Anderson, Magnolia Pet. 1.
5-3n-5w Dutton, Sinclair Oil 1.
8-3n-5w Marland-Horton, Carter Oil 2.
21-3n-5w Eason Kerans, Carter Oil 1.
Carter Kerans, Carter Oil 1.
Russell, Magnolia Pet. 1.
22-3n-5w Miller, Carter Oil 1.
27-3n-5w Ervin Polson, Carter Oil 3, 4.
Adair, Critchlow et al 2.
Cochran, Magnolia Pet. 2.
28-3n-5w Cassi Kerans, Magnolia Pet. 1.
34-3n-5w Nation, Briscoe & Hall 2.
Nation, Carter Oil 1.
Nation, Garvin Drlg. Co. 1.
Mitchell, Magnolia Pet. 2, 3.
35-3n-5w Sahm, Carter Oil 1.

Shut Down

2-8n-8w Gray, John Schwartzfischer 1.
35-5n-8w Dryden, J. B. Nichlos Oil 1.
15-5n-7w Null, Badgett & Hughes 1.
17-3n-5w Burkes, Marland Oil 1.

34-3n-5w Martin, Todd et al 2.
Rigs, 13; wells drilling, 28; total, 41.

COMANCHE COUNTY

Rigs

24-2n-10w Cox, William Green 4.
3012n-9w Indian, Continental Oil 2.

Wells Drilling

2-4n-11w Haller, Garvin Drlg. Co. 2.
10-3n-10w Jennings, Magnolia Pet. 1.
20-2n-10w School, Ashcraft et al 1.
24-2n-10w Cox, William Green 3.
Allen, Shaw & Rathke 1.
Watson, Westheimer & Daube 2.
19-2n-9w ————, Cherry & Couch 1.
Price, Magnolia Pet. 1.
Guthrie, Westheimer & Daube 2.
30-2n-9w Hardy, Magnolia Pet. 2.
29-1n-12w Bentley, Bentley et al 1.
30-1s-13w Cox, Mid-Kansas Oil 1.

Shut Down

35-4n-9w Warehime, Daisey Bell Oil 1.
10-2n-10w Spitler, Manciger Oil 1.
5-1n-10w Neeley, P. W. Appleby Jr. 1.
Rigs, 2; wells drilling, 15; total, 17.

STEPHENS & COTTON COUNTIES

Rigs

5-1n-9w Borovenski, Red Seal Refg. 1.
32-1n-5w Charleston, Magnolia Pet. 2.
25-1s-9w Russell, Magnolia Pet. 1.
26-1s-8w Williams, Pearce & Brown 1.
28-1s-8w Taliaferro, McAllister et al 2.
30-1s-8w Marcey, Garvin Drlg. Co. 1.
33-1s-8w School No. 162, Magnolia Pet. 8.

Wells Drilling

10-2n-9w Waters, Homaokla Oil 1.
26-2n-6w Church lot, Texhoma O. & R. 1.
2-2n-5w Graham, Carter Oil 1.
14-2n-5w Truitt, Rogers et al 2.
22-2n-4w Morris, F. Phillips & Barnsdall Oil 1.
31-2n-4w Jefferson, Lewis Clark Pet. & Montgomery 1.
24-1n-9w Brown, Gypsy Oil 5.
25-1n-9w Harris, Magnolia Pet. 11.
19-1n-8w Funk, C. E. Elzy 2.
30-1n-8w Hardin, Carter Oil 7.
32-1s-1ow Fink, Garvin & Urice 1-A.
24-1s-9w Johnson, Magnolia Pet. 1.
36-1s-9w School, Walter Gant 2.
17-1s-9w Furet, Magnolia Pet. 1.
18-1s-8w Johnson "B", John Farrett 1.
28-1s-8w Vess, Brown & McAllister 6.
Nelson, V. A. Kidney 2.
20-1s-8w Skelly-Brigham, Beard & Cobb 1, 2.
33-1s-8w Stevens, McMan Oil 11.
34-1s-8w Nigh, Ellis Drlg. Co. 1.
Burke, Medlin et al 1.
9-1s-5w Morris, Carter Oil 1.
12-1s-5w Doak, M. L. Amster 1.
26-1s-5w Skelly, Skelly Oil 28.
2-1s-4w Goodwin, McBride et al 1.
29-2s-7w Wilson, Comanche O. & G. 1.
3-2s-5w Brown, Magnolia Pet. 4.
Harris, Magnolia Pet. 2, 3.

Shut Down

25-2n-4w Gann, Gant et al 1.
23-1n-9w Brown, Steve Linson 4.
19-1n-8w Funk, Ill-Okla Oil 1.
21-1s-10w Johns, McBee & Heacock 1.
20-1s-8w Brittian, Malernee & Dunlap 2.
Brittian, Safety First Oil 8.
22-1s-8w Warner, Harry Hanbury 1.
28-1s-8w Voss, Guy Brown & McAllister 4.
2-2s-8w Gilworth, Pace et al 1-A.
Rigs, 7; wells drilling, 39; total, 46.

GARVIN & PONTOTOC COUNTIES

Rigs

28-5n-5e Beeker, Humble O. & R. 1.
5-3n-4e Coon, Carter Oil 1.

Wells Drilling

28-5n-5e Hatcher, Tidal Oil 1.
25-5n-6e Patterson, Gillette & Krueger 1.
34-5n-6e Stinger, American O. & R. Co. 1.
35-4n-6e Rayborn, Bowles et al 1.
25-3n-1w Paxton, Guy Fisher et al 1.
12-3n-3w Vaughn, Magnolia Pet. 1.
18-3n-4e Wren, Carter Oil 1.
14-1n-3w Newberry, S. P. Smith 7.
17-1n-3w Derdeyn, Mid-Cont. Pet. 4.
31-1n-3w Bun, Magnolia Pet. 1.

Wells Shut Down

28-4n-7e Faulkner, Hughes et al 3.
28-3n-4e Lloyd, O. P. Smith 1.
Rigs, 2; wells drilling, 12; total, 14.

CARTER COUNTY

Rigs

14-1s-3w Pollock, Magnolia Pet. 1.
18-1s-3w Jordan, Humble O. & R. 6.
33-1s-3w Lusk, Humble O. & R. 5.
34-1s-3w Newstadt, Magnolia Pet. 6.
2-2s-3w Calvery, Humble O. & R. 1.
Delman, Magnolia Pet. 2.
3-2s-3w Liles, Gypsy Oil 4.
Adams, Magnolia Pet. 2.
Smith, Skelly Oil 3, 4.
22-2s-3w Morris, Magnolia Pet. 2.
23-2s-3w R. Lohman, Magnolia Pet. 5.
16-2s-2w G. Cox, Roxana Pet. 2.
May Cox, Roxana Pet. 3.

Wells Drilling

18-1s-3w N. Hardin, Magnolia Pet. 2.
31-1s-3w Moore, Magnolia Pet. 1.
32-1s3w Morrison, Magnolia Pet. 1.
33-1s-3w Bumpass, Magnolia Pet. 5.
Lusk, Humble O. & R. 6, 7.
Bumpass, Humble O. & R. 2, 3.
34-1s-3w Hernstadt, Gilmer Oil 4.
McClish, Gypsy Oil 2, 3.
Fish, Magnolia Pet. 8.
Newstadt, Magnolia Pet. 3, 4, 5.
Ricketts, Magnolia Pet. 1.
Parnell, Simpson & Fell 1.
Snyder, Westheimer 2.
2-2s-3w Calvery, Schermerhorn Oil 1.
3-2s-3w Liles, Gypsy Oil 1, 3.
Richards, Humble O. & R. 1.
Reynolds, Humble O. & R. 1.
Adams, Magnolia Pet. 1, 3.
Reynds, Mid-Cont. Pet. 1, 2.
Pruitt, Wirt Franklin & Prairie 7, 8, 9, 10.
12-2s-3w Kennedy, Pure Oil 2.
22-2s-3w Morris, Magnolia Pet. 1.
Carpenter, Wirt Franklin 7.
23-2s-3w E. Lohman, Magnolia Pet. 11, 12-A.
J. Lohman, Magnolia Pet. 11, 12.
Williams, Magnolia Pet. 8.
Smith-Davis, C. R. Smith 1-A.
32-2s-3w Johnson, Sturm Drlg. Co. 1.
6-2s-2w Higgins, Coline Oil 6.
7-2s-2w Pierce, Coline Oil 9.
Watkins, Iowa Oil 3.
8-2s-2w Pierce, Carter Oil 2.
Pierce, Skelly Oil 2.
10-2s-2w E. Noble, Magnolia Pet. 1.
15-2s-2w Pierce, Magnolia Pet. 1.
E. Cox, Magnolia Pet. 3.
16-2s-2w Higgins, Roxana Pet. 1-B.
17-2s-2w Riley, Humble O. & R. 1.
31-2s-2w Bennett, Hilltop Oil 14.
2-3s-2w Bradford, Twin State Oil 1.
35-3s-1w Joy, Humble O. & R. 1.
20-3s-1e S. Baptiste, Amerada Pet. 27.

Shut Down

19-1s-2w Morris, McGee 1.
22-2s-3w Carpenter, C. R. Smith 1.
Calvery, Wirt Franklin 1.
23-2s-3w Williams, Magnolia Pet. 1.
7-2s-2w Watkins, Iowa Oil 1.
8-2s-2w Pierce, Skelly Oil 1.
25-2s-2w McCoy, Hivick et al 1.
Rigs, 14; drilling, 62; total, 76.

MISCELLANEOUS COUNTIES

Rigs

Harper County—
30-29-22w ————, D. T. Water 1.

Woodward County—
4-23-17w Nordyke, Diamond Drlg. Co. 1.

Logan County—
11-18-3w Matthews, Santrock Drlg. Co. 1.

Kingfisher County—
20-15-8w Otis, Hoffman et al 1.
23-15-5w Davidson, Reiter-Foster Oil 1.

Oklahoma County—
7-14-3w ————, J. V. Bailey 1. •
17-14-2w Lynn, Von Stein & Hagerling 1.
13-13-1w Martin, E. A. Hawley & Rosser 1.

Texas County—
4-1n-13e Becker, Dutton & Hill 1.

McIntosh County—
10-12-14e Tiger, H. W. Lampton et al 1.

Caddo County—
11-5n-9w Lackey, Magnolia Pet. 4.

Jefferson County—
33-6s-5w Seay, Gypsy Oil 34.
14-7s-6w Smith, J. R. McCoy 1.

Marshall County—
24-5s-5e Arbuckle, United Eight Oil 3.

Wells Drilling and Shut Down
(Shut down wells indicated by *)

Harper County—
14-25-22w Cooper, Hoffer Oil 1.

Major County—
36-22-14w Cheyenne Basin, The Texas Company 1*.
36-21-11w Gray, Frantz & Slick 1*.

Ellis County—
9-21-25w ————, Okla. Northern Oil 1.

Woodward County—
34-20-20w ————, Small & Kennessey 1.
25-21-21w Elmore, Sharon Oil 1.

Kingfisher County—
16-19-5w Kelly, Max Kelly et al 1.
12-18-5w Robins, Marland Oil 1.
6-16-7w Canfield, Pet. Eng. Core Drill Co. 1.
27-16-6w Sturgeon, McKenna & Crawford 1.
17-15-6w Creaves, Chi Oil and Nicholas 1*.

Logan County—
30-19-4w McCullough, Roxana Pet. 1.
33-19-4w ————, Bryan & Emery 1.
32-19-3w Rogers, Carter Oil 1.
28-18-4w Moore, Franklin Oil Assn. 1.
33-18-3w Quier, Haley & Pioneer Pet. 1*.
5-17-1w Baker, Zingere & Bailey 1.
28-17-1e Berry, T. B. Slick 1.
28-16-1w Lair, Blackford O. & G. 1*.
24-15-3w Amsey, W. R. Ramsey 1.

Dewey County—
7-18-15w Chronister, Meyers 1*.
9-18-15w Perfect, Huckleby-McCoy 1*.

Blain County—
21-15-10w Ekelmier, Okomo Oil 1*.

Canadian County—
9-14-6w Piatt, A. D. Spears et al 1*.
2-13-8w Setter, Carroll & Zweicher 1*.
29-13-5w Pazoureck, T. B. Slick and Ben Franks 1.
29-11-7w Sanders, O. D. Jones 1.

Oklahoma County—
15-14-2w Myer, Red Seal Refg. Co. 1.
9-14-1w Miller, Maxine Pet. 1.
10-12-3w Edwards, Cromwell O. & G. 1.

Cimarron County—
27-5n-5e St. Land, Ramsey Bros. 1.
2-2n-9e Smith, Fenton, Brookins & Flowers 1.

Texas County—
32-5n-12e Hovey, Valerius & Prairie 1*.
21-4n-14e Hovey, Wilcox O. & G. 1.
18-3n-12e Zea, Valerius O. & G. 1.
28-3n-13e Zea, Wilcox O. & G. 1.
9-3n-15e Hurliman, Reiter-Foster Oil 1.
10-2n-11e Kugle, Reiter-Foster Oil 1.
23-2n-18e Graves, Connelly, Trammel & Danner 1*.
4-1n-12e Ellison, Haley, Garber & Pulse 1.
5-1n-19e Tansey, Connelly, Trammel & Danner 1*.

Mayes County—
20-20-20e Longcrier, M. C. Fore and F. R. Shepard 1.
8-20-19e Drew, J. L. Dixon 1.

McIntosh County—
35-12-15e Wolf, Gilcrease Oil 1.
12-12-16e Love, J. A. Sheppard et al 3.
18-11-14e Stidham, Tiger Mtn. Oil 3.

Pittsburg County—
32-9n-16e Smith, J. L. Pattison 1.

Haskell County—
10-9n-18e Sanders, Marion Oil 1*.

Latimer County—
7-5n-18e Hunt, P. & F. Pet. 1*.

Beckham County—
35-9n-25w Adams, V. S. Nelson 1*.
22-9n-23w Hawkins, Magnolia Pet. 1.
36-8n-22w Devers & Cherney, W. R. Duke 1.

Kiowa County—
5-6n-18w Bonham, A. C. Varner 1*.
6-2s-16w ————, Landfair 1*.

Caddo County—
22-6n-10w Jacobs, English Drlg. Co. 1.
31-6n-9w Starkweather, English Drlg. 1*.
29-5n-12w Galbreath, W. J. Hartley 1.
23-5n-11w ————, Abernathy et al 1.
2-5n-9w Marchand, Gorton Trust Co. 2.
10-5n-9w Alexander, W. H. Livermore et al 1.
Paw Kune, Magnolia Pet. 6.
11-6n-9w Lacky, Briscoe & Hall 1.
Lacky, Lone Star Gas Co. 5.
12-5n-9w Rigney, Flora-Okla. Oil 1.

Tillman County—
13-1s-18w Snelling, Oasis Oil 1*.
1-5s-15w Riverbed, Tipton et al 1*.

Jefferson County—
5-4s-6w Hunton, Homaokla Oil 1.
27-6s-5w Cline, Humble O. & R. 1.
33-6s-5w Seay, Gypsy Oil 8.
Seay, Gypsy Oil 32, 33.
34-6s-5w Seay, Sigler et al 1.
23-7s-7w Hayes, L. C. Hivick et al 1*.
26-7s-6w Spain, Gypsy Oil 1.
5-7s-5w O. Seay, Woodruff Bros. 1*.

McClain County—
19-6n-4w Airington, Becker-Reed 1.

Murray County—
4-2s-3e Olson, Humble O. & R. 1.

Johnson County—
26-4s-5e Chastain, Deewe et al 1*.

Atoka County—
17-4s-11e Dabney, Hanson et al 1*.

Marshall County—
17-5s-5e Sacra, Kennedy Drlg. Co. 1.

Love County—
10-6s-3w Laten, R. M. Boring et al 1.
2-6s-1e Anderson, Humble O. & R. 1.
7-6s-2e Brown, Magnolia Pet. 1.
25-6s-2e Dillard, Schermerhorn ?.
28-6s-2e Fee, Westheimer 1.
Rigs, 14; drilling, 86; total, 100.

KANSAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Butler	19	2,550	8	0
Chautauqua and Elk	6	1,210	1	0
Cowley	5	270	1	1
Greenwood	63	4,892	17	0
Lyon	5	1,125	2	0
Miscellaneous	27	1,166	18	2
Total September	125	11,212	48	3
Total August	222	11,067	77	9
Difference	97	155	29	6

Summary of Rigs and Wells Drilling

County—	Rigs	Drg.	Ttl.
Butler	10	35	45
Chautauqua and Elk	1	17	18
Cowley	3	38	41
Kingman	0	11	11
Lyon	1	12	13
Marion	1	10	11
Sumner	4	23	27
Greenwood	27	70	97
Miscellaneous	15	110	125
Total September	62	326	388
Total August	76	338	414
Difference	14	12	26

WELLS COMPLETED
BUTLER COUNTY

30-23-7e Sniverly, Templeman, Frantz et al 1 ..... dry
14-27-5e Zeiset, H. H. Patton 1 ..... dry
19-27-7e Stebbins, Connell, Sheldon et al 1 ..... dry
27-27-7e Tobler, Empire G. & F. 3 .. dry
29-28-4e Love, Empire G. & F. 31 .. 130
12-27-7e Seward, White Eagle et al 2 600
13-27-7e Seward, Phillips Pet. 1 ... dry
Phillips-Seward, Phillips Pet. 1 150
78-7e-7e Iobe, Manhattan Oil 6 ..... dry
3-28-6e Blakeman, Johnson et al 2.. 500
24-26-4e Harmon, Ramsey et al 5
16-26-8e Dickinson, Tidal & Gt. Southern 35 35
16-27-6e Blackinship, Phillips Pet. 2 .. nry
17-27-6e Rose, Richmond Drlg. Co. 1.. 30
7-27-7e Lill, The Texas Company 1.. dry
12-27-7e Worrell, Empire G. & F. 1.. 100
12-27-7e Seward, White Eagle et al 3 250
13-27-7e Phillips-Seward, Phillips Pet. 2 300
3-28-6e Blakeman, Mid-Kansas 1 450

Wells completed 19
Production 2550
Dry 8

CHAUTAUQUA AND ELK COUNTIES

13-31-10 Webb, Pure Oil 10 200
14-31-10 Webb, Union Gas Corp. 14 .. 300
Webb, Union Gas Corp. 15 .. 600
13-29-8e Hanna, Roth & Co. 10 100
34-29-9e Denton, Denton Bros. 15 10
7-32-11 Chaffin, Prairie O. & G. 1 .... dry

Wells completed 6
Production 1210
Dry 1

COWLEY COUNTY

24-32-4e Shannon, Gypsy Oil 10 40
4-33-7e Reynolds, Forrester et al 1 .... gas
15-33-6e Newton, Shawver & Sutter 2.. 30
34-32-4e Kukuk, J. A. Hull 16 200
30-32-5e Carlisle, Lewis Oil 2 ..... dry

Wells completed 6
Production 270
Dry 1
Gas 1
Gas production 750,000

GREENWOOD COUNTY

1-22-10 Fuller, Day et al 4 100
Fuller, Syndicate Oil 5 400
6-22-10 Atyeo, Empire G. & F. 11 .. 40
12-22-10 Warrensburg, Phillips Pet. 8 100
14-22-11 Fromme, Empire G. & F. 12 . 100
4-22-12 Fankhouser, Empire G. & F. 7 25
Fankhouser "B", Simmons et al 6 200
5-22-12 Chandler, Phillips Pet. 3 10
30-24-11 Wiggins "B", McGinnis et al 9 400
Wiggins "B", McGinnis et al 10 200
4-22-12 Fankhouser "B", Simmons et al 10 ..... dry
12-23-8e McDowell, Manhattan Oil 1.. dry
19-23-9e Morris, White Eagle Oil 2... dry
36-24-10 Lozier, Manhattan Oil 1 .... dry
13-24-11 Ott, Stark et al 1 ..... dry
33-24-11 Garrison, Peerless O. & R. 1.. dry
7-24-11 Gaffney, Prairie O. & G. 1 .. 147
2-22-10 Sheppard, Manhattan Oil 1 .. 350
12-22-10 De Malorie, Davis, Haslett et al 21 ..... dry
De Malorie, Davis, Haslett et al 22 10
18-22-10 Browning, Rhodes et al 6 115
32-22-11 De Malorie "C", York State Oil 3 100
De Malorie "C", York State Oil 6 75
36-23-8e Burk, The Texas Company 1 dry
17-23-11 Kipfer, Swart et al 1 ..... dry
10-23-13 Schneider, Theta Oil 23 20
16-23-13 Burris, Parrish et al 1 5
28-23-13 Dehlinger "A", Mid-Continent Pet. 7 20
31-24-13 Dinnius, Christy et al 1..... 30
5-26-10 Badger, Miss. Valley Oil 1.....dry
19-22-10 Browning, Sinclair Oil 44..... 120
20-22-10 Browning Sinclair Oil 46..... 125
4-22-12 Fankhouser "C," Simmons and The Texas Company 4..... 60
9-32-12 Holderman, Titus et al 1.....100
25-23-8e Craft, Manhattan Oil 10..... 75
28-23-10 Thrall, Roth, Farout et al 57... 25
33-23-10 Wells, Manhattan et al 1.....dry
4-33-13 Inthrum, Gore & Skelly 1..... 40
Inthrum, Haverbill Pet. 14.... 30
15-23-13 Shadel, Mid-Continent Pet. 10.. 10
1-24-9e Cartwright, Roth, Faurot and Manhattan Oil 14 35
26-24-9e Halverson, Mission Oil 2..... 50
19-24-11 Freeman, Manhattan & Phillips 4 125
Lindamood, Manhattan Oil et al 4 150
6-22-10 Jones, Empire G. & F. 3..... 25
8-22-10 Pixles, Mid-Kansas 5 ..... dry
20-22-10 Prather "C," Skelly Oil 1..... dry
18-22-11 Clopton, Simmons et al 3..... 50
9-22-12 Swanson, Simmons et al 7..... 140
20-22-12 Freeman, Simmons et al 1..... dry
10-22-13 Hubbard, Callahan et al 1..... 50
15-23-9e Green, Skelly Oil 5..... 350
16-23-11 Edwards, The Texas Company and Simmons 1 200
19-23-11 Edwards, Trexell et al 1..... dry
6-24-11 Freeman "A," Crawford & McKenna 1 55
30-24-11 Wiggins "C," McGinnis et al 6.175
Wiggins "E," McGinnis et al 3...250
19-25-9e Ladd, Mid-Kansas 5 100
2-26-8e Stephenson, Tidal Oil et al 12.. 25
23-26-9e Birkett, Continental Oil 3..... 40
24-26-9e Weirshing, Beacon Oil 5..... 35
31-26-10 Hodgson, Gilbreth & Griffeth 1.dry
36-26-10 Cross, Allison & Fitzwilliams 1.dry

Wells completed 63
Production 4892
Dry 17

LYON COUNTY

32-18-10 Bender, Ritchey & Moore 1....dry
31-21-10 Atyeo, Sheedy et al 13 .....dry
30-21-10 Atyeo, Transcontinenital Oil 7..225
9-19-12 Morris, Leeward Pet. 1.....dry
25-21-10 Bradfield, McCollough et al 2..300

Wells completed 5
Production 1125
Dry 3

MISCELLANEOUS COUNTIES

Chase County—
29-18-7e Lipps, Empire G. & F. 1.....gas
25-18-6e Lipps, Preston & Pasewalk 1..gas
36-22-9e Leedy, Smith, Polhamus et al 1.dry
13-21-9e Owens, Sheedy et al 1.....dry
36-22-9e Shambaugh, Barnsdall Oil 2...dry

Marion County—
13-21-4e Allison, Sheedy & Empire 6....300
24-21-4e Jones, Sheedy et al 2.....dry

Graham County—
23-8-24w Taxton, Keys Bros. & Marine 1.dry

Geary County—
9-12-24e Wright, Liberty Texas Oil 1...dry
30-13-6e Foster, Liberty Texas Oil 1...dry

Phillips County—
15-5-16w McQueen, Curtis & Frost 1.
13-5-18w McKinley, Phillips & Prairie 1.dry

Morris County—
18-16-5e Rogers, Derby Oil 1.....dry

Reno County—
30-26-6w Demoret, Tatlock et al 1.....dry

Riley County—
26-10-6e Marks, Pawnee O. & G. 1.....dry

Rice County—
17-21-6w Brothers, Streeter & Stearns 1.dry
2-21-6w Wolstein, Phillips Pet. 1.....dry
3-21-6w Miller, Walstein-Miller Synd. 1 75

Russell County—
32-11-15w Booth, Mid-West Ref. 24....100
32-11-15w Dodge, Derby Oil et al 4.....120
Booth, Snowden & McSweeney 4 120
18-12-15w Mermis, Valerius O. & G. 2....420

Rooks County—
7-8-20w Saindon, Keys Pet. 1 .....dry

Woodson County—
6-24-14 Wintersheid, Pure Oil 11..... 30
33-25-14 Colborn, Stover Drlg. Co. 1....dry
1-26-14 Warringburg, Cortes Min. Co. 1.dry

Kingman County—
34-27-7w Graber, Fleeger et al 2.....dry

Wells completed 27
Production 1165
Dry 19
Gas 2
Gas production 9,500,000

BUTLER COUNTY

Rigs

1-25-5e Murphy, Connell et al 1.
30-26-6e McClure, Washabaugh, Foraker et al 1.
12-27-7e Worrell, Empire G. & F. 3.
Cora, Phillips Pet. 1.
Seward, White Eagle et al 4.
13-27-7e Phillips-Seward, Phillips Pet. 3.
10-28-4e Moyle, Empire G. & F. 43.
11-28-4e Wallace, Empire G. & F. 18.
7-28-5e Layton, Kismet & Sanford 1.
35-29-6e Little "A", The Prairie O. & G. 1.

Wells Drilling

2-25-3e Drake, Vickers Pet. 1.
13-25-4e Childers, Ingold et al 1.
23-26-3e Brown, Gypsy Oil 1.
11-26-4e Dempsey, Van Welch et al 1.
24-26-4e Richards, Dickerson et al 1.
17-26-5e Koogler, Empire G. & F. 72.
24-26-5e Holland, Lassen et al 1.
26-26-5e Sluss "A," Liberty O. & G. 1.
20-26-7e Ow, Golden et al 1.
35-27-4e Starkey, Empire G. & F. 11, 12.
16-27-6e Reynolds, Phillips Pet. 2.
17-27-6e Oldbury, Hoyt et al 1.
27-27-6e Clark, Hoyt et al 6.
12-27-7e Worrell, Empire G. & F. 2.
14-27-7e Harris, Sinclair Oil et al 1.
22-27-7e Harris, Mid-Kansas Oil 3.
23-27-7e Harris, Mid-Kansas Oil 3.
25-27-7e La Fee, Sheldon, Connell et al 1.
14-28-3e Shoewalter, Irwin et al 1.
3-28-6e Kramer, Allison & Fitzwilliams 4.
Blakeman, Johnson et al 3, 7.
4-28-6e Blakeman, Magnolia Pet. 1.
17-28-6e Pettet, Phillips Pet. 2.
20-29-6e Pettet, Magnolia Pet. 4.
30-28-7e Jones, Herron et al 1.
19-29-4e Owens, Hartman & Skaer 1.
28-29-6e Stefnhoff, Gled Oil 2.

Wells Shut Down

33-26Se Muich, Neeley O. & G. 1.
18-26-6e Jones, Manhattan et al 1.
7-29-4e Holcomb, Producers Pet. 1.
21-20-4e Holcomb, E. Wilcox et al 1.
12-29-6e Keneyon, Tobin et al 1.
28-29-8e Bull, Roth & Co. 1.
Rigs, 10; wells drilling, 35; total, 45.

CHAUTAUQUA AND ELK COUNTIES

Rigs

20-31-11 La Ville, Gilleapie 1.

Wells Drilling

5-32-9e Cain, The Prairie O. & G. 1.
8-34-11e Denman & Ewers, The Prairie O. & G. 7.
23-29-10 Criger, Watchorn O. & G. 1.

13-31-10 Webb, Pure Oil 10.
26-29-10 Gribbons, Benge et al 1.
14-31-10 Chaffine, Pure Oil 11.
Webb, Union Gas Corp. 16.
27-31-10 Marshall, Theta Oil 1.
34-31-10 Walker, Landon et al 1.

Wells Shut Down

11-32-10 Jeanerette, Griffith-Strueb Oil 1.
31-32-10 McNown, Foster, Harsp & Craven 1.
7-32-11 Chaffin, Mitchell, Frazier et al 1.
4-29-9e Britton, McCollough & Tolbot 1.
30-30-10e Nicholson, Landon et al 1.
3-31-8e Denton, Minnehoma Oil 1.
5-31-11 Nelson, Miller et al 1.
30-31-11 Gruban, Denman Bros. et al 1.
Rigs, 1; wells drilling, 17; total, 18.

COWLEY COUNTY

Rigs

15-32-4e Graham, Marland Oil 3.
24-32-4e Lewis, J. A. Hull 4.
7-32-5e Crosby, Ark. Fuel Oil 5.

Wells Drilling

28-30-3e Sloan, Roxana Pet. 1.
11-30-4e Weidner, Shawver & Sutter 2.
31-30-6e Robbins, Lewis Oil 10.
10-21-3e Shaffer, Benedum & Trees 6.
35-31-3e Wilson, Ark. Fuel Oil 1.
21-31-4e Goodrich, Twin State Oil 1.
28-31-4e Lewis, Trees Oil 4.
20-31-5e Sinclay, Roth and Faurot 1.
17-31-6e Harris, Tidal Oil 1.
31-31-6e Druery, Patton et al 2.
15-31-7e Clover, Cosden et al 1.
19-32-3e Waite, Carter Oil 10.
20-32-3e Carson, T. B. Slick 1, 2.
12-32-4e Brant, Ark. Fuel Oil 1.
13-32-4e Bishop, Gypsy Oil 1.
Rockwell, Marland Oil 5.
15-32-4e School land, J. A. Hull 2, 3.
Wallace, J. A. Hull 1, 2.
Swenson, Independent Oil et al 1.
Graham, Marland Oil 1.
School land, Marland Oil 1.
Wallace, Tidal and Skelly 1.
Robinson, Trees et al 1.
22-32-4e Dibbins, T. B. Slick et al 1.
9-33-3e Swope, T. B. Slick 1.
19-33-3e Holman, Brady Bros. et al 1.
Heskett, Slick & Marland 3.
7-33-7e Riding, Brown Bros. 1.
18-33-7e Smith, Doric Oil 1.
17-34-3e Baird, Shawver et al 1.
20-34-3e Surtz, Wilt & Shawver 1.
31-34-3e Mullett, Marland Oil 1.
34-34-6e Day, S. H. E. Pet. 2.

Wells Shut Down

7-30-6e White, Branson et al 1.
4-31-5e Elliott, Boxer et al 1.
Rigs, 3; wells drilling, 38; total, 41.

KINGMAN COUNTY

No Rigs

Wells Drilling

9-27-6w Hemple, Phillips Pet. 1.
16-27-7w Richardson, Carter Oil 3.
22-28-5w Linholm, Harwood & Winters 1.
31-28-5w Beshare, Crawford & McKenna 1.
11-28-6w Pagett, Marland Oil 1.
13-28-7w Greenleaf, Fleeger et al 1.
35-28-7w Yoeman, Cassoday Oil 1.
21-29-9w Schultz, Phillips Pet. 1.
35-30-9w Keiming, Vickers & Stearns 1.

Wells Shut Down

16-28-8w McKenna, Phillips Pet. 1.
4-30-6w Richards, Ozark Drlg. Co. 1.
Wells drilling, 11; total, 11.

LYON COUNTY

Rig

24-21-10 Rossillion, Super Six Oil 4.

Wells Drilling

25-19-10 Bibermyer, Culp et al 1.
30-21-10 Jones, Theta Oil 4, 5.
Atyeo, Transcontinental Oil 6, 10.
31-21-10 Atyeo "A", Transcontinental Oil 8
Atyeo, Sheedy et al 14.
19-21-11 Rosillion, Emerald Oil 1.
36-21-11 Rosillion, Emerald Oil 1.
36-21-12 McCollough, Gasche & Balliere 1.
33-21-13 Clemmer, Terrian, Balliere et al 1.

Wells Shut Down

25-20-10 Stratton, Gasche & Balliere 1.
24-21-10 Rosillion, Super Six Oil 3.
Rigs, 1; wells drilling, 12; total, 13.

MARION COUNTY

Rigs

20-18-4e Propp, Propp et al 1.

Wells Drilling

8-17-3e Damon, Ark. Fuel Oil 1.
22-17-4e Raznicek, Frank et al 1.
34-18-4e Utting, Empire G. & F. 1.
8-19-4e Propp, Youker, Propp et al 2.
29-19-4e Sallee, Leeward Pet. 1.
19-21-5e Greeley, Connell Oil 2.
31-21-5e Osgood, Holl et al 1.
8-22-5e Folly, Burford & Brimm 1.

Wells Shut Down

32-21-4e Equity, Morgan et al 1.
1-22-3e Colbeck, Cameron Bros. 1.
Rigs, 1; wells drilling, 10; total, 11.

SUMNER COUNTY

Rigs

25-21-2e Churchill, Roxana Pet. 2, 3.
4-32-2e Reese, Magnolia Pet. 1.
24-33-2e Holt, Sinclair Oil 3.

Wells Drilling

34-24-2e Olson, The Prairie O. & G. 2.
36-30-2w Riner, Cosden O. & G. 1.
19-30-4w Kelly, Champlin O. & R. 1.
22-31-2e Clodfelter, Roxana Pet. 1.
25-31-2e Mason, Roxana Pet. 1.
Rutter, Roxana Pet. 1.
Van Sickle, Roxana Pet. 1, 2.
25-31-2e Herrick, Wentz Oil 1.
25-32-1e Wirth, De Hart et al 1.
3-32-2e Rice, Stalling et al 1.
8-32-2e Reese, Marland Oil 1.
17-32-2e Morris, I. T. I. Oil 1.
Owens, Roxana Pet. 1.
Hartzell, Twin State Oil 1.
9-33-2e Wright, Marland Oil 1.
24-33-2e Holt, Sinclair Oil 2.
22-33-2w McDaniels, National Union Oil 1.
23-34-2w Douglas, Gypsy Oil 1.
18-35-1e Hamilton, Amerada Pet. 1.
13-35-2w Gilbreth, Broadhurst et al 1.

Wells Shut Down

15-30-2w Hunt, Meridian O. & G. 1.
35-31-4w Stewart, Sparta Drlg. Co. 1.
Rigs, 4; wells drilling, 23; total, 27.

GREENWOOD COUNTY

Rigs

2-22-10 Bradfield, Syndicate Oil 4.
12-22-10 De Malorie, Davis Hazlett et al 23.
20-22-10 Browning, Sinclair Oil 41, 48.
10-22-11 Yearout, White Eagle Oil 1.
4-22-12 Fankhouser "B", Simmons et al 11.
9-22-12 Swanson, Simmons et al 8.
25-22-12 Schwab, Empire G. & F. 1.
9-22-13 Todd, Enterprise Dev. Co. 1.
15-23-9e Teter, Skelly Oil 8.
Green, Skelly Oil 6.
9-23-11 Tiffany, Simmons & Amerada Pet. 6.
13-23-11 Baker, Snyder et al 1.
12-23-12 Wengler, Wilson et al 1.
34-23-13 Redikin, Katoma Oil 1.
3-24-11 Short, Abel et al 1.
18-24-11 Gaffney, Manhattan Oil 2.
20-24-11 Dougan, Robertson & Dougan 1.
12-25-8e Birkett, Roth & Faurot 10.
25-25-9e Singleton, Derby Oil 1.
17-25-12 Green, Connell et al 1.
2-26-8e Hull, Tidal Oil 29.
21-26-8e Dickinson, Tidal Oil 36.
21-26-9e Lokery, Smith et al 1.
24-26-9e Weirshing, Beacon Oil 6.
25-26-2e Sauerwine, Kurtz et al 1.
10-23-9e Noler, Skelly Oil 5.

Wells Drilling

7-24-11 Gaffney, The Prairie O. & G. 2.
2-22-10 Sheppard, Manhattan Oil 2.
Bradfield, Syndicate Oil 3.
6-22-10 Atyeo, Empire G. & F. 12.
11-22-10 Green, Phillips Pet. 3.
Green, Phillips, Ritchey & Moore 2.
20-22-10 Browning, Sinclair Oil 47.
11-22-11 Kipfer, Empire G. & F. 15.
14-22-11 Fromme, Empire G. & F. 13.
15-22-11 Bartlett, Empire G. & F. 7.
4-22-12 Fankhouser, Empire G. & F. 8.
Fankhouser "B", Simmons et al 4.
Fankhouser, The Texas Company 3.
28-22-13 Barnard,Callahan,Ainsworth et al 1.
29-22-13 Luther, Simmons & Rhodes 1.
14-23-9e Green, Murphy et al 2.
15-23-9e Green, Skelly Oil 4.
19-23-9e Morris, Empire G. & F. 6.
22-23-9e Teter, Davis, Hazlett et al 3.
15-23-10 Burgess, Roth, Faurot & Phillips 2.
29-23-10 Thrall, Empire G. & F. 5.
30-23-10 Martindale, Manhattan et al 1.
32-23-10 Thrall, Manhattan et al 58.
8-23-11 Oliver, Pure Oil 6.
16-23-11 Fogle, The Texas Company 2.
17-23-11 McGilvrey, Darby et al 4.
McGilvrey, The Texas Company 1.
9-23-13 Inthrum, Haverhill Pet. 13.
15-23-13 Schneider, Shaffer & Howell 14.
Shadel, Tidal Oil 10.
27-23-13 Schindler "A", Mission Oil 8.
28-23-13 Dehlinger "A", Mid-Cont. Pet. 8, 9.
29-23-13 Dehlinger "B", Mid-Cont. Pet. 12.
23-24-9e Moore "B", Mission Oil 1.
26-24-9e Halverson, Polhamus et al 2.
2-24-10 Dales, Vickers Pet. 1.
23-24-10 Edwards, Jno. Edwards et al 1.
25-24-10 Nixon, Phillips Pet. 2, 3, 4.
Nixon, Skelly Oil 1.
36-24-10 Mock, McGinnis et al 1.
8-24-11 Smith, Polhamus & Smith 1.
17-24-11 Jacoby, Manhattan Oil 1.
18-24-11 Gaffney, Manhattan Oil 1.
30-24-11 Wiggins "E", McGinnis et al 2.
31-24-11 Rockhill, Theta Oil 1.
13-25-8e Welch, Roth & Farout 2.
23-25-8e Jackson, Independent O. & G. 1.
24-25-8e Hoffman, Mid-Kansas 1.
30-25-9e Hoffman, Mid-Kansas Oil 9.
Ladd, Mid.Kansas Oil 8.
33-25-10 Hommond, Farr et al 1.
14-25-11 Cox, Peerless O. & R. 1.
23-25-11 Hall, Skelly Oil 1.
31-25-11 Shell, Osage O. & G. 1.
2-28-8e Edgar, Hibbard et al 1.

Wells Shut Down

23-22-11 Brown, Callahan et al 1.
27-22-11 Wick, Skelly Oil 16.
32-22-11 O'Neil, York State Oil 14.
16-23-9e Teter, Empire G. & F. 35.
7-23-11 Edwards, Marland Oil 1.
16-24-10 Mathews, Flack et al 1.
35-24-10 Edwards, Manhattan Oil 1.
12-27-9e O'Byrine, Mountain Oil 1.
7-27-10 Weaver, Griffeth et al 1.
25-27-10 Hanson, Marshall et al 1.
33-27-11 Benest, Winona Oil 1.
2-28-11 Schultz, McCollough et al 1.
Rigs, 27; wells drilling, 70; total 97.

MISCELLANEOUS COUNTIES

Rigs

Comanche County—
23-31-18w Starlock, I. M. Supard et al 1.

Dickinson County—
7-16-1e Ellason, Dewey et al 1.

Morris County—
32-14-7e Barber, Kline et al 1.

Ness County—
35-16-21w Ryersee, Bell & Sarton 1.

Pottawatomie County—
17- 9-12e Stewart, Crawford et al 1.
31- 9-12e Bratchbar, Crawford et al 1.

Rice County—
2-19-10w Hollscher, Sparta Drlg. Co. 1.

Russell County—
32-11-15w Dodge, Derby Oil et al 5.
17-12-15w Munsell, Valerius O. & G. 3.
30-12-15w Austin, Mid-West Ref. Co. 4.

Seward County—
33-32-34w Hitch, Vickers Pet. 1.

Smith County—
18- 5-15w Smith, Gardener et al 1.

Woodson County—
9-25-14e Stephenson, Fields & Cross 2.
23-26-14 Lauck, Peerless O. & R. 3.
29-23-14 Maclaskey, The Prairie O. & G. 11.

Wells Drilling and Shut Down
(Shut down wells indicated by *)

Barber County—
27-30-14w Pickens, Rowland et al 1*.
30-30-14w Richardson, Skelly Oil et al 1.
35-32-14w Ott, Vickers & Miller 1.
13-33-13w Alexander, Schaffer O. & G. 1.
14-34-11w Martin, B. B. Brown et al 1*.

Barton County—
17-19-11w Smith, Huffinet et al 1*.
28-18-12w Sooy, Rankins et al 1*.
12-20-13w Ward, Everett & Wiley 1*.

Cloud County—
6- 6-4w Murdock, Concordia O. & P. 1.

Coffey County—
8-22-14 Miller, Derby Oil 1.
29-22-14 Kaufman, Ark. Fuel Oil 1.
17-22-17e Volland, McGinnis et al 1.
14-23-16 Jones, Fidelity Oil 1*.

Dickinson County—
23-13-3e Jones, Leeward Pet. 1*.

Edwards County—
7-23-19w Noberwell, Edwards County Pet. 1.

Ellsworth County—
3-16-8w Herman, Wrightsman 1.

Franklin County—
17-16-18 Owens, Smith, Thrice & Fisher 1*.
22-16-21 Parris, Leeward Pet. 1.

Geary County—
18-11-5e Kurtze, Kirby & Wright 1.

Graham County—
27- 8-25w St. John, Gulf Coast Drlg. Co. 1*.

Harper County—
28-31-9w Muir, Wakefield et al 1.
19-32-5w Burk, Berry Pet. 1.
22-34-6w Caton, Bu-Vi-Bar Pet. 1.

Harvey County—
10-23-3w Freeson, Liggett et al 1.
17-24-3w Boyle, Sinclair Oil 1.

Hodgeman County—
19-21-22w Frizzell, Spencer & Marconette 1*.

Jefferson County—
13- 9-19 Edwards, Northern Counties 1*.

Labette County—
26-32-17e Wilks, Ark. Fuel Oil 1*.
11-32-20 Thurman, Noble O. & G. 1*.
33-32-20 Burnes, W. C. Willy 1*.
1-33-17 Hornbeck, Cowell et al 1*.
5-35-20 Lipps, Wantland et al 1*.

Lincoln County—
35-10-10w Brown, Red Bank Oil 1.

Logan County—
14-14-33w Moffett, Coon et al 1*.

McPherson County—
3-18-2w Anderson, Fowler et al 1.
29-18-2w Anderson, Waugh & Casey 1.

Mitchell County—
10- 7-10w Kyle, Marland Oil 1.

Montgomery County—
21-31-14 Faler, Ramler et al 1*.
21-32-13 Neiman, Dunn et al 1*.
36-32-14 Dryhead, Irish et al 1*.
5-32-16 Brinkman, Cowell et al 1*.
35-32-16 Wyberger, Bloom et al 1*.
29-32-17 Hellum, Earl & Overlease 1*.
35-33-16 Felt, Voice & Tabor 1*.
4-33-17 Hall, Townsend et al 1*.
30-33-17 Bunk, Brown & Wolf 1*.
28-34-14 Owens, Phillips Pet. 1*.
12-35-16 Wilson, Tex-O-Kan Oil 1*.
4-35-17 Walker, Gallowye & Roberts 1*.

Morris County—
21-17-7e Welcher, Bowmand & Jones 1*.
24-17-9e Cessman, Rock Creek Oil 1*.

Nemaha County—
19- 3-11 Myers, Nemaha O. & G. 1*.

Osborn County—
19- 8-13w Bliss, Krueger et al 1*.

Osage County—
3-15-15e Lease, Barber et al 1*.
27-15-16e Baley, West et al 1*.
8-17-17 Nail, Mull-Vi-Dev. Co. 1.

Pottawatomie County—
11-10-12 St. Mary, Crawford et al 1*.

Reno County—
10-23-4w Magnuson, Sheldon et al 1.
35-23-7w Nesley, Fleeger-Mid-Kansas 1.
36-24-7w Rexroad, Miss. Valley Oil 1.
24-24-8w Smith, Hartman & Skaer 1*.
9-25-7w High, Cassoday Oil 1.
7-26-7w Stevens, Hopper et al 1.
25-26-9w Dutton, T. B. Slick 1.

Rice County—
1-19-7w Deed, Pryor & Lockhart 1.
21-20-6w Barnes, Stamey et al 1.
26-20-6w Johanson, Midland Oil 1.
35-20-6w Welch, Phillips Pet. Co. 1.
11-21-6w Swanson, Youker et al 1.
34-20-6w Libby, The Prairie O. & G. 2.
2-21-6w Walstein, The Prairie O. & G. 1, 2.
35-20-6w Welch, The Prairie O. & G. 3.

Riley County —
20-10-7e Thierer, Youker et al 1*.

Rooks County—
11- 9-16w Lukman, Livingston et al 1.
35-10-19w Casey, Findless et al 1.

Rush County—
10-18-16w Moore, Morgan et al 1*.

Russell County—
13-11-13w Popishal, Krueger et al 1.
14-12-13w Wilson, Wilcox O. & G. 1.
20-13-15w Sloan, Keys Pet. 1.
6-14-12w Linsay, Kettle & Shoemaker 1.
5-14-15w Dortland, Mid-West Ref. Co. 36.

Saline County—
29-14-2w Davis, L. S. Johnson et al 1*.
26-15-2w Sheldon, Brown & Woodrow 1.
15-15-4w Holquest, Thrall et al 1*.

Sedgwick County—
6-25-1e Poff, Boyle et al 1*.
9-25-2e Harrison, Smith & Keller 1*.
34-26-1e Jaden, Wichita Oil 1*.
7-26-2e Mills, Lamson et al 1*.
17-29-1e Howell, Carr, Hartman & Skaer 1.
2-29-2e Fleming, Higgins 1.

Seward County—
14-33-33w Son, Wilson et al 1.

Shawnee County—
36-11-13 Werner, Holl et al 1.

Stafford County—
24-22-11w Richardson, Randall & Johnson 1*.

Wabaunsee County—
15-13-12 Henderson, Williams et al 1*.

Wilson County—
3-27-14 Daniels, Allison & Fitzwilliams 1.
22-28-13 Thompson, Price et al 1*.
29-30-17 Smally, West & Williams 1*.

Woodson County—
35-25-13 Johnson, Altomite Oil 1.
13-25-14 Hunt, Alters et al 1*.
13-26-14 Daniels, Burford & Brimm 1.
23-26-14 Town, Peerless O. & R. 4.
24-26-14 Lauber, McCollough et al 1*, 2.

Chase County—
19-18-7e Lipps, Empire G. & F. 4, 3.
36-18-7e Mulvane, Miss. Valley Oil 1.
3-18-9e White, Watchorn O. & G. 1.
1-21-9e Richards, Manhattan & Phillips 1*.
36-22-9e Shambaugh, Mid-Kansas Oil 4.
Rigs, 15; wells drilling, 110; total, 125.

NORTH AND WEST TEXAS

Summary of Wells Completed

North Texas—	Comp.	Prod.	Dry	Gas
Archer	106	10,546	41	0
Brown	85	6,791	20	1
Callahan	17	812	4	0
Clay	3	0	3	0
Coleman	9	0	8	1
Comanche	4	0	4	0
Cooke	11	563	1	0
Eastland	20	57	12	4
Foard	1	0	0	1
Hardeman	1	0	1	0
Hood	1	0	1	0
Jack	6	281	2	0
Jones	1	1,000	0	0
McCullough	1	0	1	0
Montague	53	3,339	6	1
Palo Pinto	6	30	3	1
Shackelford	34	2,990	13	3
Stephens	9	1,248	1	1
Throckmorton	5	176	2	0
Wichita	49	3,820	21	0
Wilbarger	29	2,232	11	0
Wise	2	0	2	0
Young	38	998	9	0
West Texas—				
Brewster	1	0	1	0
Crane	6	807	0	0
Crockett	4	95	2	0
Culberson	1	0	1	0
Ector	1	0	1	0
Howard	3	95	1	0
Midland	1	0	1	0
Mitchell	4	116	1	0
Reagan	11	4,160	0	0
Scurry	1	0	1	0
Upton	36	18,803	1	0
Total Sept.	569	58,959	176	13
Total August	533	31,446	201	6
Difference	36	27,513	25	7

Rigs and Wells Drilling

West Texas—	Rigs	Drg.	S.D.	Ttl.
Crane	2	12	5	19
Crocket	0	10	2	12
Mitchell	5	13	2	20
Reagan	9	40	8	57
Upton	20	36	3	59
Miscellaneous	15	64	27	106
Total West Texas	51	175	47	273
North Texas—				
Archer	9	47	5	61
Brown	7	68	17	92
Callahan	7	17	6	30
Coleman	2	14	13	29
Eastland	4	19	10	33
Jack	0	6	3	9
Montague	3	36	3	42
Shackelford	8	60	9	77
Stephens	11	21	9	41
Throckmorton	3	20	5	28
Wichita	8	59	2	69
Wilbarger	17	53	16	86
Young	7	23	3	33
Miscellaneous	7	41	17	65
Total North Texas	93	484	118	695
Grand total September	144	659	165	968
Grand total August	135	666	203	1,004
Difference	9	7	38	36

WELLS COMPLETED
ARCHER COUNTY

Turbeville, American Refining Co. 1-A. dry
Turbeville, American Refining Co. et al 3 172
Oldham, Atlantic Oil Producing Co. 6 10
Abercrombie & Taylor, Bridwell & Heydrick 1 10
Abercrombie & Taylor, Bridwell & Heydrick 2 dry
Netherton, Bridwell & Heydrick 1 dry
Wilson, Bridwell & Heydrick 4 dry
Perkins et al, G. J. Brown 3 60
Perkins, G. J. Brown 4 30
Fee, Perry Browning 1 dry
Reese, L. T. Burns 1 dry
Ferguson, Consolidated Oil Co. 19 8
Kunkel, Cook & Reeder 3 dry
Parkey-A, Empire Gas & Fuel Co. & Moran 1 175
Parkey, Empire Gas & Fuel Co. 2 dry
Logan, Evans et al 3 dry
Thomas, Gates et al 7 60
Thomas, Gates et al 8 20
Thomas, Gates et al 9 ..
Thomas, Gates et al 10 75
Thomas, Gates et al 12 ..
Spradlin, Grebin et al 1 dry
Young, Grebin et al 1 dry
Harrison, Grisham et al 1 dry
Prideaux, Hivick et al 1 dry
Hamilton, Humble Oil & Refining Co. 16 20
Moss, Humble Oil & Refining Co. 1 dry
Andrews, Jeffers & Newby 3 42
Andrews, Jeffers & Newby 4 dry
Prideaux, Kell & Kruger 4 360
Wilson, Kentucky Oil Co. & Roxana Petroleum Corp. 1 dry
Dale Bros., Kerbow et al 1 dry
Parkey, Kimmel & Dillard 1 dry
Turbeville, Kruger & Wilson 1 dry
Dilliday Wilson, McCarty Oil Co. 4 30
Duke Parrish, McCarty Oil Co. 2 40
Parrish Bros. McCarty Oil Co. 2 dry
Luke Wilson, McCarty Oil Co. 2 60
Luke Wilson, McCarty Oil Co. 3 40
Ford, McGregor et al 13 dry
Benson, Madden et al 5 100
Cowden Portwood, Magnolia Petroleum Co. 13 dry
Hudson, Magnolia Petroleum Co. 2 43
Lowe, Magnolia Petroleum Co. 15 37
Lowe, Magnolia Petroleum Co. 16 65
Lowe, Magnolia Petroleum Co. 24 17
Parrish-B, Magnolia Petroleum Co. 11 40
Richardson, Magnolia Petroleum Co. 1 dry
M. Rutty-B, Magnolia Petroleum Co. 6 15
Thomas-B, Marland Oil Co. 3 75
Turbeville, Marland Oil Co. 2 190
Turbeville, Marland Oil Co. 3 93
Turbeville, Marland Oil Co. 5 200
Turbeville, Marland Oil Co. 6 dry
White, Marland Oil & Kentucky Oil Co. 1 13
Andrews, Mid-Kansas Oil & Gas Co. 2 dry
Andrews, Mid-Kansas Oil & Gas Co. 3 dry
Graham-Stewart, Moran 2 65
Holley, Murchison & Fain 1 dry
Hudson, Page et al 1 dry
Thomas, Pandem Oil Corp. 7 30
White, Panhandle Oil & Gas Co. 2 dry
Carter, Park Priddy et al 1 dry
Hankins, Peeler et al 1 dry
J. H. Turbeville, Petroleum Producers 1 1200
Wilson, Philmock Oil Co 1 dry
Burgess, Pitzer & West 2 75
Burgess, Pitzer & West 3 75
Pease Est., Plains Prod. Co. 1 dry
Prideaux, Plains Prod. Co. 3 12
Prideaux, Plains Prod. Co. 4 10
Jack, Reed et al 5 6
Jack, Roberts Oil Co. 11 40
Jack, Roberts Oil Co. 12 45
Stewart, Roberts Oil Co. 1 114
Abercrombie & Taylor, Roxana Petroleum Corp. 4 75
Kreeger, Roxana Petroleum Corp. 5 124
Robinson-A, Shaw & Rathke 3 12
Routan, Simms Oil Co. 1 50
Turbeville, Simms Oil Co. 5 215
Turbeville, Simms Oil Co. 6 700
Turbeville-A, Simms Oil Co. 5 800
Turbeville-A, Simms Oil Co. 6 200
Turbeville-A, Simms Oil Co. 7 200
Turbeville Simms Oil Co. & Burns 2 dry
Turbeville Simms Oil Co. & Consolidated Oil Co. 1 35
Turbeville Simms Oil Co. & Consolidated Oil Co. 2 10
Jackson, Shappel Oil Co. 1 dry

Beardon, The Texas Company 15..... 80
Jentsch, The Texas Company 1..... dry
Turbeville-C, The Texas Company 2..... 245
Turbeville-C, The Texas Company 3..... 205
Turbeville-C, The Texas Company 4..... 325
Turbeville-C, The Texas Company 5..... 550
Turbeville-C, The Texas Company 6..... 347
Turbeville-C, The Texas Company 7.....1130
Turbeville-C, The Texas Company 8.....1020
Hamilton, Texhoma Oil & Refining Co. 15..... 100
Hamilton, Texhoma Oil & Refining Co. 16..... 20
Thomas, Texhoma Oil & Refining Co. 1. dry
Thomas, Texhoma Oil & Refining Co. 2 dry
Wolf-A, Texhoma Oil & Refining Co. 3. dry
Kemp & Kemper, Texhoma O. & R. Co. 1 & Maer 1..... 211
Rogers, Texhoma O. & R. Co. & Gilland & Fisher 1..... dry
Benson Est, Tidal Oil Co. et al 2..... 30
Turbeville, Tidal Oil Co. 1..... dry

Wells completed 106
Production 10546
Dry 41
Gas 0
Gas production 0

BROWN COUNTY

Fry, Amerada Petroleum Corp. 2..... dry
L. H. Bettis, Arkansas Fuel Co. 1..... dry
Jones, Blackstone Oil Co. 1..... dry
Pierce, Campbell & Rosenfield 1..... dry
Arledge, J. S. Cosden 1..... dry
East Westerman, J. S. Cosden 2..... 60
Gafford, J. S. Cosden 10..... 25
Williams, J. S. Cosden 4..... 100
Williams, J. S. Cosden 4-A..... 75
Williams, J. S. Cosden 10-A..... 50
Kilgore Bros., Curry & Moore 1..... 10
Pickett, Curry & Moore 2..... 240
Williams, Curry & Moore 1..... 30
Wooldridge, Curry & Moore 3..... 480
Graham, Douglas et al 2..... dry
Carson, Dozier et al 1..... 75
Reynolds, Eastland Oil Co. 1..... dry
Carmichael, Gibson Oil Corp. 1..... 2
Newton, Gillespie 2..... 40
Newton, Gilman et al 18..... 20
Moore, Gilman & McMurray 8..... 25
Teston, Gilman & McMurray 10..... 10
Byler, Gray 1..... dry
Gunn, Gunn Production Co. 9..... 20
Kilgore Bros., Huffman 5..... 20
Armstrong, Humble Oil & Refining Co. 1 85
Foster, Humble Oil & Refining Co. 4 200
Fry, Humble Oil & Refining Co. 1..... 84
Fry, Humble Oil & Refining Co. 2..... 80
Hodnett, Humble Oil & Refining Co. 6. 50
J. C. Kilgore, Humble Oil & Refining Co. 8-B..... 2
J. C. Kilgore, Humble Oil & Refining Co. 9-B..... 150
E. P. & W. H. Kilgore, Humble Oil & Refining Co. 12-B..... 150
E. P. & W. H. Kilgore, Humble Oil & Refining Co. 13-B..... 100
E. P. & W. H. Kilgore, Humble Oil & Refining Co. 14-B..... 100
E. P. & W. H. Kilgore, Humble Oil & Refining Co. 15-B..... 400
E. P. & W. H. Kilgore, Humble Oil & Refining Co. 6-C..... 10
E. P. & W. H. Kilgore, Humble Oil & Refining Co. 7-C..... 300
E. P. & W. H. Kilgore, Humble Oil & Refining Co. 8-C..... 192
Wooldridge, Humble Oil & Refining Co. 1..... 112
Prater, H-W Drilling Co. 8..... 20
Foster, Kone Prod. Co. 2..... 75
Foster, Kone Prod. Co. 4..... 225
Fry, Wm. Lester 3..... 207
Fry, Wm. Lester 4..... 200
Henslee, Louisiana Oil & Refining Co. 3 200
Henslee, Louisiana Oil & Refining Co. 4 6
Henslee, Louisiana Oil & Refining Co. 5 200
Foster, McKanna Oil Co. 4..... 200
Foster, McKanna Oil Co. et al 6..... 67
Foster, McKanna Oil Co. et al 14..... 200
Josie Wooldridge, McLester Oil Co. 7.. 200
W. M. Wooldridge, McLester Oil Co. 8.. 200
W. M. Wooldridge, McLester Oil Co. 9.. 50
Gaines, McMan Oil & Gas Co. 1 2
Edington, Midwest Exploration Co. 2.. dry
Suttles, Midwest Exploration Co. 9.... 2
Suttles, Midwest Exploration Co. 11.... 30
Eabs, Moore & Furham, 1..... dry
Young, E. Morris 1..... dry
Newton, Pool et al 1..... dry
Mrs. A Armstrong, Prairie Oil & Gas Co. 3..... dry
W. S. Johnson, Prairie Oil & Gas Co. 1. 20
Pickett, Prairie Oil & Gas Co. 2..... 25
Turner, Prairie Oil & Gas Co. 1..... dry
Kilgore, Prairie Oil & Gas Co. 1..... dry
Wooldridge, Prairie Oil & Gas Co. 8.. 60
W. A. Prather, Rhodes & Higher 11.... dry
Buzbee, Root & Rhodes 1..... dry
Brooks, E. L. Smith Oil Co. 1..... dry
Mullins, Smith Oil Co. 1..... dry
White Est., Sawyer et al 1..... 360
Gaines, The Texas Company 1..... 15
Hickman, The Texas Company 2..... 300
W. A. Stone, The Texas Company 1 gas
Newton, West & H-Y Oil Co. 5..... 60
Newton, West & H-Y Oil Co. 10..... 100
Newton, West & H-Y Oil Co. 11..... 25
Newton, West & H-Y Oil Co. 12..... 20
Newton, West & H-Y Oil Co. 13..... 10
Newton, West & H-Y Oil Co. 14..... 15
Keller, Williamson et al 4..... 60
Keller, Williamson et al 5..... 150
Wooldridge, Williamson et al 2..... 150
Funderburk, Womack & Loofborrow 1.. dry

Wells completed 85
Production 6791
Dry 20
Gas 1
Gas production 2,000,000

CALLAHAN COUNTY

Long, Amerada Petroleum Corp. 4..... 50
Finley, Borealis Oil Co. 1..... dry
Sawyer, Bradstreet et al 1..... 20
Long, Brown & Co. 3..... 50
Derrington, Canyon Oil & Gas Co. 5.. 150
Bond, Cranfill & Reynolds 2..... 75
Henderson, Cranfill & Reynolds 3..... 55
Carey, Evans et al 1..... dry
J. A. Miller, Flannigan et al 1..... dry
Powell, Humble Oil & Refining Co. 9.. 122
Derrington, McChesney 1..... 30
McDonough, Prairie Oil & Gas Co. 11.. 10
Baum, Prairie Oil & Gas Co. 2..... 30
Bond, Prairie Oil & Gas Co. 5..... 100
Bond, Prairie Oil & Gas Co. 6..... 20
Bond, T. B. Slick 2..... et al 1..... 100
Harris, Southern Petroleum Exploration Co. 1..... dry

Wells completed 17
Production 812
Dry 4

CLAY COUNTY

Scaline, Faubion, Miller & McGann 1.. dry
Conner, Grisham et al 1..... dry
G. A. Scaling, Hamilton, Barkley & Dry 3
Meadows 1..... dry

Wells completed 3

COLEMAN COUNTY

Dibrell, Burk-Greis Oil Co. & Gwinnup 4 abd
Dibrell, Gilman et al 1..... dry
W. A. Smith, Jewell & Sill 1..... dry
Pitty, McKenzie et al 1..... dry
Morris, Midwest Exploration Co. 1..... gas
R. E. Harris, National Oil & Refining Co. 2..... dry
J. W. Harris, Ramsey & Maxey 1..... dry
Morris, Ross & Wright 1..... dry
Garrett, Schadbolt & Creighton 1..... dry

Wells completed 9
Production 0
Dry 8
Gas 1
Gas production 22,500,000

COMANCHE COUNTY

Evans, Brown Drilling Co. 1..... dry
N. J. Cogburn, J. F. Carter et al 1..... dry
J. M. Mauncey, Kirk & Brewer 1..... dry
C. H. Turner, E. L. Smith Oil Co. 1..... dry

Wells completed 4
Dry 4

COOKE COUNTY

Dennis, Hooser Oil Co. 2..... 56
Dennis, Hooser Oil Co. 3..... 105
Hyman, C. C. Lanier 1..... 45
Hyman, C. C. Lanier 2..... 55
Hyman, C. C. Lanier 3..... 85
Hyman, C. C. Lanier et al 5..... 65
Hyman, C. C. Lanier et al 6..... 6
Hamilton, Leonard & James 1..... TA
Hyman, Roxana Petroleum Corp. 1..... 2
Hyman, Sun Oil Co. 1..... 132
Hyman, Sun Oil Co. 2..... 12

Wells completed 11
Production 563
Dry 1

EASTLAND COUNTY

T. E. Norris, Corzelius Bros. 1..... gas
Proctor et al, Eastland Oil Co. 1..... dry
Wright, Eastland Oil Co. 3..... 10
Richmond, Greene Prod. Co. 1..... dry
J. D. Parsons, Gulf Production Co. 7... dry
J. D. Parsons-A, Gulf Production Co. 7. 27
Owen et al, Hickok Pet. & Dev. Co. 1.. dry
S. H. Parsons, Humble Oil & Refining Co. 4..... 12
S. H. Parsons, Humble Oil & Refining Co. 6..... dry
Ford, Magnolia Petroleum Co. B-1..... dry
Harris, Magnolia Petroleum Co. 12..... dry
Farmers State Bank, Mid-Kansas Oil & Gas Co. 1..... gas
Casey, Mook-Texas Oil Co. 2..... gas
Nunnally, Murchison & Fain 1..... dry
L. M. Clark, Navarro Oil Co. 1 (750,000) gas
Wright, Panhandle Refining Co. 2..... dry
Falls, Ross & Frost 1..... dry
P. G. Wright, The Texas Company 1.... dry
J. E. Butler, Texas Pacific C. & O. Co. 27..... dry
Durocher, Texas Pacific C. & O. Co. 1.. 8

Wells completed 20
Production 57
Dry 12
Gas 4
Gas production 10,650,000

FOARD COUNTY

Easley, Humble O. & R. Co. & Navarro Oil Co. 1..... gas

HARDEMAN COUNTY

Norton, Wolf et al 1..... dry

HOOD COUNTY

Cook, Parsons et al 1..... dry

JACK COUNTY

Cullers, Buttram Oil Co. 1..... 112
Rounsaville, Camp Oil & Gas Co. 1.... dry
Snedeker, Hester, Hawkins & Staley 3 4
Richards & Lanier, McClure et al 1.... dry
Cullers, Seaboard Oil Co. 2..... 125
First National Bank, Security Drilling Co. 1..... 40

Wells completed 6
Production 281
Dry 2

JONES COUNTY

Joe Winters, Phillips Petroleum Co. 1..1000

McCULLOUCH COUNTY

Roberts, Van Bibber et al 2..... dry

MONTAGUE COUNTY

J. W. Maddox, Empire Gas & Fuel Co. 1 dry
Maddox, Farlan Oil Co. 2..... 70
Maddox, Farlan Oil Co. 3..... 68
Hinds-A, F. H. E. Oil Co. 8..... 25
Howard-A, F. H. E. Oil Co. 3..... 35
Howard et al-A, F. H. E. Oil Co. 4.... 96
Salmon et al, F. H. E. Oil Co. 3..... 15
Hinds-B, Fleming & Kimbell 5..... dry
Maddox, Gracey & Kahle 2..... 85
N. J. Howard et al, Gulf Production Co. 1..... 127
N. J. Howard et al-A, Gulf Production Co. 1..... 30
Maddox, Humble Oil & Refining Co. 6.. 70
Maddox, Humble Oil & Refining Co. 7.. 62
Maddox, Humble Oil & Refining Co. 8.. 80
Hinds, Lesh, McCall & Kilcrease 6..... 30
Howard et al, McMann Oil & Gas Co. 1. 35
Maddox, Newblock Oil Co. 4..... 110
Maddox, Olean Oil Co. 5..... 60
J. W. Maddox, Pure Oil Co. 2..... 127
Rowland et al-B, Pure Oil Co. 1..... 85
Maddox, E. L. Smith Oil Co. 3..... gas
Maddox, E. L. Smith Oil Co. 4..... 30
E. J. Bouldin, The Texas Company 1... dry
Gist-A, The Texas Company 18..... 62
Gist-A, The Texas Company 20..... 40
Gist-A, The Texas Company 21..... 60
Gist-A, The Texas Company 22..... 15
Gist-A, The Texas Company 23..... dry
N. J. Howard et al, The Texas Company 1-B..... 54
J. W. Maddox, The Texas Company 1-C; dry
Maddox, The Texas Company 2-C..... dry
Martin, The Texas Company 3..... 25
Oldham et al, The Texas Company 14.. 95
Oldham et al, The Texas Co. 15..... 65
Oldham, The Texas Co. 16..... 137
Oldham, The Texas Company 17..... 75
Oldham, The Texas Company 18..... 117
Oldham, The Texas Company 19..... 100
Oldham, The Texas Company 20..... 70
Oldham, The Texas Company 23..... 90
Riddle, The Texas Company 1..... 210
Bouldin-A, Texhoma Oil & Refining Co. 2..... 130
Bouldin-A, Texhoma Oil & Refining Co. 3..... 137
Howard-A, Texhoma Oil & Refining Co. 9..... 40
Howard et al, Texhoma Oil & Refining Co. 10..... 45
Howard et al, Texhomas Oil & Refining Co. 11..... 40
Maddox-A, Texhoma Oil & Refining Co. 1..... 45
Maddox-A, Texhoma Oil & Refining Co. 2..... 80
Rowland, Texhoma Oil & Refining Co. 5 15
Rowland, Texhoma Oil & Refining Co. 6 165
Rowland, Texhoma Oil & Refining Co. 7 72
Rowland, Texhoma Oil & Refining Co. & Republic 5..... 40
Howard et al, Walker et al 1..... 75

Wells completed 63
Production 3239
Dry 6
Gas 1
Gas production 13,000,000

PALO PINTO COUNTY

Strawn Coal Co., Burton McKee Oil Corp. A-1..... 25
Edgin, Dalton 1..... 5
Cardwell, Hart 1..... dry
Orme, Hart 1..... dry
Satterfield hrs., Meyer & Williams 1.. gas
Stuart, Moore & Snebold 4..... dry

Wells completed 6
Production 30
Dry 1
Gas production 500,000

SHACKELFORD COUNTY

English, Barney Carter et al 1..... dry
Moberly, Derby Oil Co. 1..... 20
Newell, French & Lewis 2..... dry
Dyer, Gibson & Johnson 1..... dry
Newell, Gibson & Johnson 1..... dry
Chapman, Gwinnup et al 1..... dry
Slobottom, Harrel et al 1..... dry
Poindexter, Hope Petroleum Co. 1..... dry
Reynolds, Hope Petroleum Co. 8..... dry
Cook, Humble Oil & Refining Co. 8..... 287
Flippen, Jackson et al 2..... dry
Terry, Magnolia Petroleum Co. 6..... 60
Nail, Moore 1..... gas
Flippen, Panhandle Refining Co. 1..... dry
E. A. Jeter, Reclamation Oil Co. 1..... dry
Cook, Roeser & Pendleton 2-B-60..... 500
Cook-Roeser & Pendleton 1-B-61..... 300
Cook, Roeser & Pendleton 2-B61..... 200
Cook, Roeser & Pendleton 9-B-84..... dry
Cook, Roeser & Pendleton 10-B-85..... 800
Cook, Roeser & Pendleton 12-B-85..... 45
Cook, Roeser & Pendleton 14-B-85..... 60
Cook, Roeser & Pendleton 15-B-85..... 40
Cook, Roeser & Pendleton & Marland Oil Co. 1-A-60..... 80
Cook, Roeser & Pendleton & Marland Oil Co. 18-A-84..... 75
Cook, Roeser & Pendleton & Marland Oil Co. 20-A-84..... 50
Cook, Roeser & Pendleton & Marland Oil Co. 21-A-84..... 200
Cook, Roeser & Pendleton & Marland Oil Co. 22-A-84..... 75
Cook, Roeser & Pendleton & Marland Oil Co. 23-A-84..... dry
Cook, Roeser & Pendleton & Marland Oil Co. 24-A-84..... gas
Cook, Roeser & Pendleton & Marland Oil Co. 26-A-84..... 100
Cook, Roeser & Pendleton & Marland Oil Co. 14-A-85..... 86
Cook, Roeser & Pendleton & Marland Oil Co. 16-A85..... gas
Matthews, Skelly Oil Co. 1..... 12

Wells completed 34
Production 2990
Dry 13
Gas 3
Gas production 3,750,000

STEPHENS COUNTY

P. P. Langford et al Gulf Production Co..... dry
J. M. Ward-C, Gulf Production Co. 31.. 35
Richardson, Humble Oil & Refining Co. 1..... 30
Chesley, Meredith & Thomas 1..... 300
Hill Acct. 2, Mid-Kansas Oil & Gas Co. 1 500
Carey, Sun Oil Co. 6..... 75
Swanson Est., Swensondale Oil Corp. 1-B 15
Taylor, Swensondale Oil Corp. 1..... 5
Pratt, Texas Fidelity Oil Corp. 1..... 288

Wells completed 9
Production 1248
Dry 1
Gas 1
Gas production 30,000,000

THROCKMORTON COUNTY

D. McKeichen, J. G. Adams et al 1..... 6
Elliott, Reiter Foster Oil Corp. 1..... 120
Elliot, Reiter Foster Oil Corp. 2..... dry
Parrott, Reiter Foster Oil Corp. 3..... 50
Stubblefield, Reiter Foster Oil Corp. 2.. dry

Wells completed 5
Production 176
Dry 2

WICHITA COUNTY

Burnett, Ascot Oil Co. 7..... dry
H. Wills, Dr. Bailey et al 1..... dry
H. Wills, Dr. Bailey et al 2..... dry
Ward & Todd, Bridwell & Heydrick 6... dry
Ward & Todd, Bridwell & Heydrick 7.. 500
Burnett, R. I. Carter 1..... 3
Ramming, R. I. Carter 4..... 15
Ramming, R. I. Carter 5..... abd
Ramming, R. I. Carter 6..... abd
Ramming, R. I. Carter 7..... 10
Ward & Todd, R. R. Clark et al 4..... 625
Ward & Todd, R. R. Clark 7..... 300
Ward & Todd, R. R. Clark et al 8..... 1250
Ward & Todd, Clark, Waggoner & Hammon 2..... dry
Pierce Oil Corp., Emmert G. & F. 19.. 3
Ward & Todd, L. P. Hammond 1.. 25
Allingham-A, Hereford Oil Co. 3..... dry
Hines, T. F. Hunter 1..... dry
J. F. Kiel, Kiel Chapman & Porter 1 dry
Fassett & Tuttle, Kimmel & Dillard 1 108
Munger, K. M. A. Oil Co. 26..... 9
Waggoner-AA, C. F. Klop 1..... 5
Miller, H. M. Long et al 1..... dry
Harrison, John O'Neil 1..... dry
Allen & Kemp C, O'Donohoe & Gates 1 dry
Griffin, Panhandle Refining Co. 1..... 108
Douglas Blk. 2, Patterson 1..... 10
Chilson, Perkins, Cullum & Stump 4.. dry
Chilson, Perkins, Cullum & Stump 5.. dry
Allen & Kemp-D, Petroleum Inv. Co. 5. 60
Fisher, Petroleum Inv. Co. 19..... 10
Fisher, Petroleum Inv. Co. 21..... 40
Warner, Pigg & Murchison 1..... dry
Henson, Ryan Petroleum Co. 4..... dry
Nance, Ryan Petroleum Co. 79..... 32
Nance, Ryan Petroleum Co. 80..... 12
Nance, Ryan Petroleum Co. 81..... 5
Nance, Ryan Petroleum Co. 82..... 35
McCorty-A, Shappel Oil Co. 9..... dry
Dutton, Simms Oil Co. 6..... 35
C. Ramming, Skelly Oil Co. 12..... 18
Ward & Todd, Stidham & Thrasher 1 400
Foster & Saunders, The Texas Co. 5 dry
Waggoner, The Texas Co. 309..... 115
Waggoner, The Texas Co. 310..... 60
Burnett-E, Texhoma Oil & Ref. Co. 10.. 27
Waggoner, Texhoma Oil & Ref. Co. 19.. 2
Burnett, Trinity Prod. Co. 17..... dry

Wells completed 49
Production 3320
Dry 21

WILBARGER COUNTY

W. H. Stevens-A, Barkley & Meadows 13 10
Stephens, Bridwell & Heydrick 14..... 25
Stephens, Empire Gas & Fuel Co. 46.. dry
Stephens, Empire Gas & Fuel Co. 49.. 20
Castlebury, Humble Oil & Refining Co. 24 50
Stephens, Humble Oil & Refining Co. 50 65
W. T. Waggoner-H, Humble Oil & Refining Co. 15..... 121
Waggoner-I, Humble Oil & Refining Co. 6..... 35
Waggoner-K, Humble Oil & Refining Co. 9..... 100
Waggoner-M, Humble Oil & Refining Co. 7..... 60
W. T. Waggoner-M, Humble Oil & Refining Co. 11..... 60
Waggoner-M, Humble Oil & Refining Co. 13..... 60
W. T. Waggoner-N, Humble Oil & Refining Co. 5..... 8
W. TH. Waggoner-P, Humble Oil & Refining Co. 2..... 124
W. T. Waggoner-B, Milham Corp. 5..... 45
Waggoner-H, Milham Corp. 6..... 10
W. T. Waggoner-L, Milham Corp. 4..... 78
Waggoner-L, Milham Corp. 15..... 260
W. T. Waggoner, Miller Oil Co. 4..... dry
Fluhman, Murchison & Fain 1..... abd
W. T. Waggoner-C, Phillips Petroleum Co 1..... 175
Waggoner-D, Phillips Petroleum Co. 7.. 12
Waggoner-L, Phillips Petroleum Co. 3.. 10
Waggoner-M, Phillips Petroleum Co. 2.. dry
W. T. Waggoner-Q, Phillips Petroleum Co. 4..... 180
Waggoner-R, Phillips Petroleum Co. 2.. 80
Waggoner-HH, Phillips Petroleum Co. 3 126
Waggoner-NN, Phillips Petroleum Co. 9 128
Waggoner-QQ, Phillips Petroleum Co. 4 240
Waggoner-QQ, Phillips Petroleum Co. 11 60
Waggoner-AAA, Phillips Petroleum Co. 1..... dry
W. T. Waggoner-A, Prairie Oil & Gas Co. 5..... 60
Fee, Sec. 19, Rio Bravo Oil Co. 1..... dry
Waggoner-C, Rondeau 1..... dry
Coleman, Roxana Petroleum Co. 1..... dry
W. T. Waggoner, The Texas Co. 306.. dry
Waggoner-D, Waggoner Refining Co. 1 30
Zipperle, Weil 1..... dry
Haney, Wood 1..... dry

Wells completed 39
Production 2232
Dry 11

WISE COUNTY

Cassidy South Western Commercial Co., Magnolia Pet. Co. 2..... dry
Castleberry, Transcontinental Oil Co. 1 dry

YOUNG COUNTY

Raching-B, Atlantic Oil Prod. Co. 9 150
C. W. Johnson, Barkley & Harris 1... dry
Brown, Barnes et al 2..... 30
Brown, Barnes et al 3..... 15
Williams-A, Bridwell & Mayfield 2..... 15
Steen, Casey et al 1..... T.A.
Raching, Chenault & Lea 7..... 60
Fee, Collier 1..... dry
Fee, Collier 2..... 50
Fee, Collier, 3..... dry
Fee, Collier 4..... 30
Logan et al Halmock Oil Co. 1..... dry
Benson, Madden et al 5..... 55
Benson, Madden & Hunt 6..... 30
Williams, Minnich et al 1..... dry
Stewart, J. J. Moran 4..... 35
Campbell-E, Murchison & Fain and Marland Oil Co. 4..... dry
Boozer, Nance & Lucas 1..... 22
Whitehead, Pandem Oil Corp. 6..... 30
Prideaux, Panhandle Oil & Refining Co. 1..... 40
Keller-C, Pitzer & West 8..... 50
Jack, Reed et al 6..... 35
Rogers, Roberts Oil Co. 13..... 40
Rogers, Roberts Oil Co. 14..... 50
Spencer, Roberts Oil Co. 1..... dry
Stewart, Ruff et al 2..... 40
Stewart, Ruff et al 3..... 95
Routon, Texhoma Oil & Refining Co. 1 dry
Benson, Tidal Oil Co. et al 2..... 35
Benson-A, Tidal Oil Co. et al 8..... 8
Benson-A, Tidal Oil Co. et al 9..... 15
Benson-A, Tidal Oil Co. et al 10..... 10
Routon, Simms Oil Co. 2..... 38
Gregg, Simms, Cosden & Consolidated 3 5
Beardon, The Texas Co. 16..... 11
Stewart, The Texas Co. 2..... 7
Boren, Wichita Prod. Co. 8..... 4
Stewart, Wo-Mac Oil Co. 5..... 25

Wells completed 38
Production 998
Dry 9

TEXAS PANHANDLE COMPLETIONS FOR AUGUST, 1926

CARSON COUNTY

Burnett Est., American Refining Co. 6 T.A.
Burnett Est., American Refining Co. 9.. 100
Burnett, Gulf Prod. Co. 13..... 90
S. B. Burnett, Gulf Prod. Co. 15..... 312
Burnett, Marland Oil Co. 7..... 26
Burnett-A, Marland Oil Co. 2..... T.A.
Burnett, The Texas Co. 8..... 100
M. C. Burnett, The Texas Co. 9..... Abd

Wells completed 8
Production 530
Dry 2

GRAY COUNTY

Merten Bros., Magnolia Pet. Co. 1..... 100
Merten Bros., Magnolia Pet. Co. 6..... 20
Worley & Reynolds, Wilcox-Pampa Oil Co. 4..... 37

Wells completed 3
Production 457

HUTCHINSON COUNTY

E. Cockrell, Alaska Petroleum Co. 1.. 150
Bivins-B, Amarillo Oil Co. 4..... gas
Whittenberg, Amerada Pet. Corp. 2.. 20
J. A. Whittenberg-B, Amerada Pet. Corp. 4..... 325

J. A. Whittenberg, American Ref. Co. 2 100
Merchant, Big Creek Oil Co. 1 ..... gas
Smith, Buffalo Oil Co. 1 220
Whittenberg, Canyon Oil Co. 4 800
Whittenberg, Canyon Oil Co. 5 1600
J. A. Whittenberg, Coble-Whittenberg 1 100
Johnson Bros., Delmar Oil Co. 1 75
Johnson Bros., Derby Oil Co. et al 1 .. 1000
J. A. Whittenberg, E. J. Dunnigan et al 2 25
Smith, Echo Oil Co. 3 700
Smith, Echo Oil Co. 4 200
J. F. Weatherly, Empire Gas & Fuel Co. 2 200
J. F. Weatherly, Fly-Blackburn 2 100
J. A. Whittenberg, Goldeline Oil Co. 1.. 180
J. A. Whittenberg, Goldeline Oil Co. 2.. 100
C. L. Dial et al, Gulf Prod. Co. 11..... 120
C. L. Dial et al, Gulf Prod. Co. 14..... 802
C. L. Dial et al, Gulf Prod. Co. 15..... 125
Dial, Gulf Prod. Co. 18 472
C. L. Dial et al, Gulf Prod. Co. 23..... 330
C. L. Dial et al, Gulf Prod. Co. 24....1085
E. B. Johnson et al, Gulf Prod. Co. 3 .. 45
E. B. Johnson et al, Gulf Prod. Co. 7... 107
Whittenberg, Gulf Prod. Co. 1-A..... 322
Whittenberg-B, Gulf Prod. Co. 2 100
J. A. Whittenberg-B, Gulf Prod. Co. 3. 240
J. A. Whittenberg-D, Gulf Prod. Co. 2. 65
Whittenberg, Gulf Prod. Co. 1* 2
S. B. Sanford-B, Gulf Prod. Co. ..... gas
Kingsland, J. K. Hughes Dev. Co. 4-A. 10
Kingsland, J. K. Hughes Dev. Co. 2-B. 75
Smith, S. D. and W. W. McIlroy 4 1680
H. E. Smith, S. D. and W. W. McIlroy 7 65
Johnson-Gray, McMan Oil & Gas Co. 2. 340
Johnson-Wheatley, McMan Oil & Gas Co. 2 5
Johnson-Wheatley, McMan Oil & Gas Co. 3 480
Whittington-Archer, McMan Oil & Gas Co. 1 75
Whittington-Archer, McMan Oil & Gas Co. 2 50
Whittington-Archer, McMan Oil & Gas Co. 3 100
Perkins-Dial-A, Marland Oil Co. 1 200
Perkins-Dial, Marland Oil Co. 1 250
Perkins-Dial, Marland Oil Co. 2 700
Perkins-Dial, Marland Oil Co. 4 260
Perkins-Dial, Marland Oil Co. 5 800
Perkins-Dial, Marland Oil Co. 6 300
Perkins-Dial, Marland Oil Co. 7 600
Perkins-Dial, Marland Oil Co. 8 250
Weatherly-A, Marland Oil Co. 4..... 50
Weatherly-B, Marland Oil Co. 1 300
J. F. Weatherly-B, Marland Oil Co. 2.. 100
Weatherly-C, Marland Oil Co. 1 120
J. F. Weatherly-C, Marland Oil Co. 2.. 65
J. F. Weatherly-C, Marland Oil Co. 3.. 50
Whittenberg, Marland Oil Co. 1..... 75
Whittenberg, Marland Oil Co. 2 90
J. A. Whittenberg, Marland Oil Co. 4.. 100
Whittenberg, Marland Oil Co. 2-A..... 150
Whittenberg, Marland Oil Co. 4-AA.... 150
Johnson Sec. 20, Minnehoma Oil Co. and Kistler 1 240
W. L. Kingsland, New Domain Oil Co. 2 100
W. R. Harvey, Permain Oil Co. 1..... dry
H. E. Smith, Phillips & Heywood 2.... 200
Johnson, Phillips Petroleum Co. et al 2 150
Johnson-Dorsett, Phillips Petroleum Co. 1 300
Johnson-Gordon, Phillips Petroleum Co. 1 1200
Johnson-Walling, Phillips Petroleum Co. 1 550
Haines-Whittenberg, Phillips Petroleum Co. 1 200
Haines-Whittenberg, Phillips Petroleum Co. 2 100
Whittenberg-Patton, Phillips Petroleum Co. 1 75
Whittenberg-Patton, Phillips Petroleum Co. 4 100
Whittenberg-Patton, Phillips Petroleum Co. 5 100
J. A. Whittenberg, Phillips Petroleum Co.-Coble 14 75
J. A. Whittenberg, Phillips Petroleum Co.-Coble 15 1000
J. A. Whittenberg, Phillips Petroleum Co.-Coble 18 100
J. A. Whittenberg, Phillips Petroleum Co.-Gibson Oil 50
Johnson-A, Prairie Oil & Gas Co. 5 120
Johnson-A, Prairie Oil & Gas Co. 6 100
Johnson-A, Prairie Oil & Gas Co. 9 540
Johnson-A, Prairie Oil & Gas Co. 11.... 125
Johnson-A, Prairie Oil & Gas Co. 12.... 115
Johnson-A, Prairie Oil & Gas Co. 14.... 100
Johnson-B, Prairie Oil & Gas Co. 2 200
M. Weatherly, Prairie Oil & Gas Co. 3 60
Smith, Sec. 11, Relief Oil Co. 4..... 1200
Smith, Roxana Petroleum Corp. 4-B..... 25
Johnson Bros., Ryan Petroleum Co. 3.. 300
Johnson Bros.-Cunningham, Skelly Oil Co. 2 20
Johnson Bros., Skelly Oil Co. 3 100
H. E. Smith, J. L. Smith 2 75
Smith, Sunburst Oil Co. 2 800
H. E. Smith, Triangle Oil Co. 2..... 4000
P. E. Reimer, Wentz Oil Corp. 1..... gas
J. A. Whittenberg, Westex Oil Co. 8 .. 800
Hedgecoke, White Eagle Oil & Refining Co. 1 492
Hedgecoke, White Eagle Oil & Refining Co. 3 500
Hedgecoke, White Eagle Oil & Refining Co. 4 315
Johnson, White Eagle Oil & Refining Co. 7 75

Wells completed 102
Production 32102
Dry 0
Gas 4
Gas production 140,500,000

WHEELER COUNTY

J. H. Jackson, Scott & Barner 1..... gas
Newton, Upham Gas Co. 1 ..... gas

Wells completed 2
Gas 2
Gas production 28,000,000

WEST TEXAS COMPLETIONS FOR SEPTEMBER, 1926

BREWSTER COUNTY

J. P. Wilson, Green Valley Oil Co. 2.. dry

CRANE COUNTY

J. T. McElroy, Gulf Prod. Co. 3 265
O'Keefe (University), Magnolia Petroleum Co. 1 100
Hughes-Gibbs, Marland Oil Co. 1 237
King, The Texas Co. 2 125
Union Land, Section 21, The Texas Co. 1-F 20
University Land, Tidal Oil Co. 1..... 60

Wells completed 6
Production 807
Dry 0

CROCKETT COUNTY

University, The California Co. 2..... dry
Noelke, J. S. Cosden 1 ..... dry
Powell, Humble Oil & Refining Co. 8.. 45
L. P. Powell, Humble Oil & Refining Co. 10 50

Wells completed 4
Production 95
Dry 2

CULBERSON COUNTY

Kloh & Rumsey, Deep Rock Oil Co. 1. dry

ECTOR COUNTY

Johnson, Henry Zweifel et al 1..... dry

HOWARD COUNTY

John Roberts, Joe Edgar et al 1..... dry
Otis Chalk, Marland Oil Co. 2..... 95

MIDLAND COUNTY

Hill, Rook & Zimmerman 1 ..... dry

MITCHELL COUNTY

C. M. Adams, Lse. 3, The California Co. 2 60
H. C. Miller, Lse. 4, The California Co. 6 40
E. Morrison, Lse. 2, The California Co. 16 16
Hyman, Morrison & Thompson 1 ..... dry

Wells completed 4
Production 116
Dry 1

REAGAN COUNTY

University, Big Lake Oil Co. 76 700
University, Big Lake Oil Co. 77 20
University, Big Lake Oil Co. 78 214
University, Big Lake Oil Co. 81 818
University, Big Lake Oil Co. 85 343
University, Big Lake Oil Co. 86 490
University, Group 1, Texon Oil & Land Co. 1-A 600
University, Group 1, Texon Oil & Land Co. 6 75
University, Group 1, Texon Oil & Land Co. 48 420
University, Group 1, Texon Oil & Land Co. 50 220
University, Group 1, Texon Oil & Land Co. 51 260

Wells completed 11
Production 4160
Dry 0

SCURRY COUNTY

Welborn, Northwest Oil Co. 1-A..... dry

UPTON COUNTY

Burleson, Dixie Oil Co. 7 2000
Hughes, Dixie Oil Co. 3 250
Hughes, Dixie Oil Co. 4 4430
A. S. Burleson, Humble Oil & Refing Co. 1 115
Burleson, Independent Oil & Gas Co. 2. 1408
Taylor, Ipdependent Oil & Gas Co. 4.. 400
L. Taylor, Independent Oil & Gas Co. 5 41
Emma Wooley, Independent Oil & Gas Co. 2 2000
M. L. Baker, McMan Oil & Gas Co. 1.. 25
Burleson, Marland Oil Co. 9 46
Burleson, Marland Oil Co. 10 310
Burleson, Marland Oil Co. 11 130
Burleson, Marland Oil Co. 12 160
Burleson, Marland Oil Co. 13 40
Burleson, Marland Oil Co. 14 180
Burleson, Marland Oil Co. 15 150
Burleson, Marland Oil Co. 16 150
Burleson, Marland Oil Co. 17 45
Burleson, Marland Oil Co. 18 155
Burleson, Marland Oil Co. 19 130
Burleson, Marland Oil Co. 20 75
Burleson, Marland Oil Co. 21 45
Burleson, Marland Oil Co. 22 30
Sanger, Marland Oil Co. 10 70
Sanger, Marland Oil Co. 11 35
Sanger, Marland Oil Co. 12 50
E. S. Keith, Marland Oil Co. & Zoch 2 .187
Della Bowen, Roxana Petroleum Corp. 1 170
E. S. Hughes, Roxana Petroleum Corp. 1 237
Burleson, Sun Oil Co. 3 225
Burleson, Sun Oil Co. 6 65
A. S. Burleson, The Texas Co. 2 82
R. King, The Texas Co. 1 100
King, The Texas Co. 3 738
R. King, The Texas Co. 4 369
University Land, Sec. 53, The Texas Co. 1 ..... dry

Wells completed 36
Production 18803
Dry 1

ARCHER COUNTY

Rigs

Parrish-B, Magnolia Petroleum Co. 12.
Turbeville-C, The Texas Company 10.
Thomas, Atlantic Oil & Petroleum Co. & Holmes 1.
F. Jehlik, J. S. Cosden & Consolidated Oil Co. 4.
Kell & Kempner, Gulf Prod. Co. 3-C.
Tarr, Elliott et al 1.
Hamilton, Humble Oil & Refining Co. 17.
Thomas, Marland Oil Co. 11.
White, Marland Oil & Kentucky Oil Co. 2.

Wells Drilling

Turbeville, American Refining Co. et al 4, 5.
Turbeville, Burns 1.
Parkey, Empire Gas & Fuel Co. 3.
Kell & Kempner-C, Guf Prod. Co. 2.
S. H. Melugin, Gulf Prod. Co. 1.
Wilson, H. J. Heartwell 1.*
Parrish, T. F. Hunter 1.
White, Jetter & Anderson 1.*
McCrory-C, Kentucky Oil Co. & Empire Gas & Fuel Co. 1.
Perkins, Marland, Bass & Dillard 1.
D. Parrish, McCarty Oil Co. 3, 4.
Andrews, Mid-Kansas Oil & Gas Co. 4.
Turbeville, Petroleum Production Co. et al 1.
Turbeville, Plains Prod. Co. 1.
Yeatts et al, Shappel Oil Co. 1.
Turbeville-A, Simms Oil Co. 3, 8.
Turbeville-C, The Texas Company 9.
Moss, W. C. Young 1.
Logan et al, Atlantic Oil Production Co. 1.
Robinson, Benton & Langford 1.
Abercrombie & Taylor-B, Bridwell & Heydrick 1.
Kunkel, Cook & Reeder 4.
Thomas, Gates et al 17.
Crawford, Goldin & Cochran 1.
Farmer, Goldin & Cochran 1.*
Lowe, Goldin & Cochran 4.
Wilson, Goldin & Cochran & Phillmack Oil Co. 1.
Andrews, Hill et al 1.
Robinson, Hooper & Graves 2.*
Garvey, A. W. Johnston 1.
Hudson, Magnolia Petroleum Co. 3.
Little, Magnolia Petroleum Co. 8.
Lowe, Magnolia Petroleum Co. 17.
Baggett, Mid-Tex Oil Co. 1.
Turbeville, Muse & Robinson 1.
Hudson, Pandem Oil Corp. 3.
Thomas, Pandem Oil Corp 8.
Abercrombie & Taylor, Roxana Petroleum Corp. 5.
Kreeger, Roxana Petroleum Corp. 6.
Muller, Schermerhorn Oil Co. 2.
Prideaux, Schermerhorn Oil Co. 1, 2.
Turbeville, Simms Oil Co. & Burns 3, 4.
Richardson, The Texas Company 14.
Harmonson, Trammel & Moore 1.*
Ward, Underwood Drilling Co. 1.
Prideaux, Lee Wilson 1.

Rigs, 9; wells drilling, 47; wells shut down, 5; total 61.

BROWN COUNTY

Rigs

Killion, Eastland Oil Co. 1.
Thompson, Gilman & McMurray 6.
Turner, Maer & Staniforth 1.
Keller, Williamson et al 6.
Wooldridge, Williamson et al 3, 4.
Lot 9, Evans 1.

Wells Drilling

Turner, Amerada Petroleum Corp. 1.*
Allen, Barkley & Conway 5.
Dunn, Bedichek 1.*
McClanahan, Berryman et al 1.
Cason, Bowers 2.
Eads, Bowers 1.
Stout, Bradstreet 1.
Weedon, Brown 1.
Kennedy, Carter 1.
Lowe, Choate & Henshaw 1.
Armstrong, Clark & Kimbell 1.*
Elmo Williams, J. S. Cosden 6.*
Mrs. T. S. Williams, J. S. Cosden 1-A.
Smith, Campbell & Rosenfield 1.
Pichett, Curry & Moore 3.
Wooldridge, Curray & Moore 4, 5, 6, 7.
Byrd, Dozier & Mulloy 3.
Green, Empire Gas & Fuel Co. 1.
Henson, Gillespie 17.
Newton, Gillespie 5.
Prater, H-W Drilling Co. 9.
Runge, Hoffer Oil Corp 1.
Keller, Holdman 1.*
Kilgore, Bros., Huffman 2*.
Keller, Hughes Development Co. 3.
Harrell, Humble O. & R. Co. 1.
Hickman, Humble O. & R. Co. 2.
J. C. Kilgore, Humble O. & R. Co. 4-A, 11-B.
Wooldridge, Humble O. & R. Co. 2, 3.
Perry, Hurley Oil Co. 1.
Graham estate, Jarvis et al 1*.
Taber, Jones & Neiswanger 1.
Foster, Kone Prod. Co. 8.
Fry, William Lester 1-A.
Henslee, Louisiana O. & R. Co. 6.
Wooldridge, McLester Oil Co. 8, 9.
W. M. Wooldridge, McLester Oil Co. 10, 11, 12.
Fry, Magnolia Pet. Co. 1, 2.
Broom, Maxwell & Turman 1*.
Suttles, Midwest Exploration Co. 12, 2-A, 3-A.
Keeler, Mitcham 1.
Perry, Mitcham 1.
Brannum, Moore et al 1.
Jones, Ratbiott 1*.
Allcorn, Ray Oil Co. 1.
Suttles, Root et al 13.
Shore, Sinclair O. & G. Co. 1.
Newton, T. B. Slick 2*.
Broocke, Superior Oil Co. et al 1.
Edington, The Texas Company 7.
Johnson, The Texas Company 2.
Lee, Thomas & Reynolds 1.
Hickman, Union Oil Co. 1.
Newton, West & H-Y Oil Co. 15, 16, 17, 18.
Lawson, Williams et al 1.
Whitted, Advance Oil Co. 1*.
McDaniel, Campbell & Rosenfield 1*.
Brown, Christmas 1.
Taylor, Fain et al 1*.
Taber, Holliday et al 1*.
Denman, Hynes et al 1.
Leach, Hynes et al 1.
Thigpen, Moore et al 1*.
Womack, Morris 1.
Sneed, Nelson 1*.
Oden, Russell et al 1.
Mattock, Savings & Scoggins 1*.
Cleveland, Schoonmacker 1.
Hall, Shadbolt & Creighton 1.
Bourn Bros., Wilhausen et al 1.

Rigs, 7; wells drilling, 68; shut down, 17; total, 92.

CALLAHAN COUNTY

Rigs

Derrington, Canyon O. & G. Co. 6.
Bond, Cranfill & Reynolds 3.
Boydston, Gibson & Johnson 1.
Seale estate, Mississippi Valley Oil Co. 1.
Baum, Mook-Texas Oil Co. 1.
Baum, Prairie O. & G. Co. 3.
Ferguson, Sanger O. & R. Co. 1.

Wells Drilling

Windham, Adams et al 1.
Long, Brown & Co. 4.
Cutbirth, Canary et al 1.
Ramsey & Estes, J. S. Cosden et al 1*.
Henson, Cranfill & Reynolds 6.
Ross, Dixie Drilling Co. 1*.
Johnson, Empire G. & F. Co. 1.
LaMar, Florence Oil Co. 2.
Franke, Hughes Dev. Co. 1.
Irvin, Humble O. & R. Co. 1*.
Irvin, Ingleright et al 1*.
Moore, Mission Drilling Co. 1*.
Walker & Caldwell, Moore et al 1.
Walker & Caldwell, Moore et al 1-A.
Hays, Oklavania Oil Co. 1.
Rushing estate, Pardee et al 1.
Cunningham, Prairie O. & G. Co. 6.
Hall, Reeves & Meredith 1.
Young, Roeser & Pendleton 1.
Dancy, Sinclair O. & G. Co. 1.
Bond, T. B. Slick 3*.
McDonough, T. B. Slick 3.
Alvord, White Eagle O. & R. Co. 1.

Rigs, 7; wells drilling, 17; shut down, 6; total, 30.

COLEMAN COUNTY

Rigs

Dibrell, Burke, Greis & Gwinnup 8.
Dibrell, Zweifel et al 1.

Wells Drilling

Dibrell, Altitude Oil Co. 1.
Teagle, Bradstreet et al 1.
Dibrell, Burke-Greis Oil Co. 5.
Sealey & Smith, Curtis et al 1*.
Crawford, English et al 1*.
Harris, English et al 1*.
Overall, Flannigan 1.
Morris, Magnolia Pet. Co. 17.
Dibrell, Mid-Kansas O. & G. Co. 1*, 2*.
O'Hair, Root et al 1.
Gray, Schermerhorn Oil Co. 1*.
Gray, Urban 1*.
Smith, Whitmire 1*.
West, Wilford et al 1*.
Hays, Gray 1.
Pfluger, Jewell & Sill 1*.
Harris, Kirby Pet. Co. 1.
Russell, Logan et al 1*.
Harris, Monroe Prod. Co. 1.
Overall, Monroe Prod. Co. 2*.
Wallace estate, Morris 1.
Burk, Morrison & St. John 1.
Johnson, Newby et al 1*.
Wells, Van Eman et al 1.
Taylor, Westheimer & Daube 1.
Witkowski, World Oil Co. 1.

Rigs, 2; wells drilling, 14; shut down, 13; total, 29.

EASTLAND COUNTY

Rigs

Beard, Arab Gasoline Corp. 1.
Thomas, Magnolia Pet. Co. 1.
Continental State Bank, Murchison & Fain 1.
Lewis, Texas Dev. Co. 2.

Wells Drilling

Norris, Corzelius Bros. 1.
Higgins, Evans et al 1.
Hankins, Gates Oil Co. 5*.
H. F. Ferrell et al, Gulf Prod. Co. 1.
Earners, Lightfoot et al 1.
Thurman, Magnolia Pet. Co. 1*.
Farmers State Bank, Mid-Kansas O. & G. Co. 1*.
Pritchard, Moore et al 1*.
Motes, Parsons et al 5*.
Robinson, Parsons et al 1.
Fox, Parton & Myers 1*.
Brashear, Rown & Morrissey 1*.
Grove, Adams et al 2*.
Connellee, Amytex et al 3.
Rose, Arnold et al 1.
Hill, Barkley & Crotty 1.
Roach, Brownfield & Morrow 1.
Nobel, Chestnut & Smith 1.
Ramsower, Continental Oil Co. 1.
Kemp, Corzelius Bros. 1.
Hughes, Gordon 1.
Dill, Lewis et al 1.
Johnson, McBride 1*.
Brown, McLester Oil Co. 1.
White, Rumbaugh & Thompson 1*.
Allen, Shasta Oil Co. 1.
Leveridge, Texas Fidelity Oil Corp. 1.
McAlister, Thomas & Reynolds 1.
Cove, World Oil Corp. 1.

Rigs, 4; wells drilling, 19; shut down, 10; total, 33.

JACK COUNTY

Wells Drilling

Loving, Burke-Greis Oil Co. 1.
Cullers, Buttram Pet. Co. 2*.
Gaskin, Buttram Pet. Co. 1.
Preston, Buttram Pet. Co. 4*, 5.
Bailey, Conklin et al 1.
Thomason, Dingee et al 1*.
Gray, Rochelle et al 1.
Carpenter estate, Watchorn Oil Co. 1.

Wells drilling, 6; shut down, 3; total, 9.

MONTAGUE COUNTY

Rigs

Oldham, The Texas Company 21, 22.
Maddox, Texhoma O. & R. Co. 3.

Wells Drilling

Yarborough estate, Alexander & Lyles 1.
Howard, Allday Oil Corp. 1.
Snapp estate, Camp O. & G. Co. 1.
Rolls, Cato Oil Co. 1.
Converns, Commercial Pet. Co. 1.
LaForce estate, Consolidated Oil Co.
Flint et al, Farmers Creek O. & G. Co. 1.
Howard et al-B, F. H. E. Oil Co. 2.
Howard et al-A, F. H. E. Oil Co. 4, 5.
Maddox, F. H. E. Oil Co. 1.
Maddox, Gracey & Kahle 3.
N. J. Howard, Gulf Prod. Co. 3.
J. W. Rowland, Gulf Prod. Co. 1.
Maddox, Harris & Simons 3.
Hines, Humble O. & R. Co. 12.
Maddox, Humble O. & R. Co. 4.
Howard et al, McMan O. & G. Co. 2.
Jones B-1, Pure Oil Co. 1*.
Keck, Pure Oil Co. 1.
Rowland et al-B, Pure Oil Co. 2.
Oldham-A, Pure Oil Co. 3.
Cunningham, The Texas Company 1.
Gist-A, The Texas Company 16.
Hodges, The Texas Company 1.
Maddox-A, The Texas Company 2.
Salmon-C, The Texas Company 1.
Bouldin-A, Texhoma O. & R. Co. 1*, 4.
Howard et al-A, Texhoma O. & R. Co. 10.
Howard et al-B, Texhoma O. & R. Co. 1.
Loy et al, Texhoma O. & R. Co. 2.
Rowland, Texhoma O. & R. Co. 8, 9, 10.
Rowland-B, Texhoma O. & R. Co. 1.
William, Dickett et al 1.
Wilson, Green et al 1.
Boedecker, Grigsby Oil Co. 1*.

Rigs, 3; wells drilling, 36; shut down, 3; total, 42.

SHACKELFORD COUNTY

Rigs

Ackers, Gibson & Johnson 1.
Poindexter, Gwinnup et al 1-46.
Reynolds, Hope Pet. Co. 13.
Cook, Humble O. & R. Co. 9.
King, Humble O. & R. Co. 2.
Scott, Roeser & Pendleton 1-174.
King, Simmons 1.
Moberly, Tannehill Oil Co. 1-59.

Wells Drilling

Proctor, Carter Dev. Co. 3.
Huskey, Carter 1.
Goodwin, Chronic 1.
Ivey, Cranfill & Reynolds 1.
Diller Bros., Dingee et al 1.
Erharat, Gallagher & Howland 1*.
Owens, Gilliam & Logan 1.
Nail, Googan 1.
J. A. Willis et al-A, Gulf Prod. Co. 1.
Goodwin, Gwinnup et al 1-72.
Poindexter, Gwinnup et al 1-47.
Reynolds, Halle & Knight Oil Corp. 1.
Moberly, Holmack Oil Co. 1.
Matthews, Harris 1*.
Williams, Hazelton et al 1.
Reynolds, Heck et al 4.
Matthews, Hodges & Engle 4.
Davis, Hope Pet. Co. 3*.
Diller Bros., Hughes et al 1.
Cook, Humble O. & R. Co. 10, 11.
Davis, Independent O. & G. Co. 2*.
Flippen, Jackson et al 1-B*.
Snygg, Logan et al 1.
Moberly, Magnolia Pet. Co. 2.
Matthews, Marland Oil Co. 1.
Cannon, Melton Oil Co. 1*.
Goodwin, Mid-Kansas O. & G. Co. 1.
Moore, Milham Corp. 1.
Sedwick, Milham Corp. 2, 3, 5.
Simpson, Milham Corp. 3.
Nail, Moore 1.

Matthews, Overlees 3.
Matthews, Republic Prod. Co. 1*.
Matthews, Robert Oil Corp. 1.
Cook, Roeser & Pendleton and Marland Oil Co. 15-A84, 24-A-84, 26-A-84, 29-A-84, 30-A-84, 31-A-84, 17-A85, 18-A-85, 1-A-116.
Cook, Roeser & Pendleton 1-B-60, 3-B-60, 6-B-60, 7-B-60, 8-B-60, 3-B-61, 4-B-61, 17-B-85, 18-B-85, 19-B-85.
Nail, Roeser & Pendleton and Marland Oil Co. 1-A-121.
Nail, Sinclair O. & G. Co. 7, 8.
Matthews, Skelly Oil Co. 2.
Vickers, Smith et al 1.
Dyer, Southern Petroleum Exploration Co. 1.
Poindexter, Spoonts et al 1.
Osborne, The Texas Company 1.
Poindexter, Waterbury et al 1.
Proctor, Wentz Oil Corp. 2*, 3*.
Matthews, York & Delaney 1.
Austin, Zeigler & Fentiess 1.
Rigs, 8; wells drilling, 60; shut down, 9; total, 77.

STEPHENS COUNTY

Rigs

Magers, Hart Oil Corp. 1.
Hill, account 1, Mid-Kansas O. & G. Co. 11.
Kirkland, Mid-Kansas O. & G. Co. 4.
Morrison, Mid-Tex Oil Co. 2.
Pratt, Barkley & Conway 1.
Chesley, Meredith & Thomas 1.
Riddel et al, Mook et al 1.
Elder, Pender Prod. Co. 2.
Hart, Pender Prod. Co. 2.
Hefley, Thompson 1.
Webb, Urban et al 1.

Wells Drilling

Wm. Spicer, Gulf Prod. Co. 1.
Curry, Hanlon Gasoline Co. 2.
Hamil, Humble O. & R. Co. 1.
Coody, Kenridge Oil Co. 1.
S. H. Hill, account 1, Mid-Kansas O. & G. Co. 10*.
Richardson, Mid-Kansas O. & G. Co. 2.
Vick, Mid-Tex Oil Co. 1*.
Martin, Pennok Oil Co. 8*.
Moon, Phillips Pet. Co. 1.
Lydon, Prairie O. & G. Co. 5.
Knox, Republic Prod. Co. 7*.
Allen, Scott & Bateman 1.
Martin, Texas Consolidated Oil Co. 8.
Williams, Atkinson & Sandefer 2.
Compton, Bateman & Campbell 1*.
Satterfield heirs, Chastain & Donley 1.
Hodges, Chestnut & Smith Corp. 2.
Goforth, Corzelius Bros. et al 1*.
Long, Hucony Gas Co. 1*.
McPherson, Hucony Gas Co. 1.
Hart, Humble O. & R. Co. 6.
Swenson, Jones 32*.
Christenson, Livingston et al 1.
Bruce, Mook-Texas Oil Co. 1.
Akin, Phillips Pet. Co. 4.
Sikes, States Oil Corp. 4.
Pratt, Texas Fidelity Oil Corp. 2.
Binney, Texas Pacific Coal & Oil Co. 67*.
Bradford, Texas Pacific Coal & Oil Co. 3.
Gardenshire, account 2, Texas Pacific Coal & Oil Co. 5.
Rigs, 11; wells drilling, 21; shut down, 9; total, 41.

THROCKMORTON COUNTY

Rigs

Graham, Humble O. & R. Co. 1.
Mathews, Humble O. & R. Co. 1.
Richards et al, Humble O. & R. Co. 1.

Wells Drilling

Buchanan, Associated Pet. Co. 1.
J. H. Lee et al, Gulf Prod. Co. 1.
J. M. Parrott, Gulf Prod. Co. 1.
Batchler, Humble O. & R. Co. 1.
Ellis, Humble O. & R. Co. 1.
Harris, Humble O. & R. Co. 1*.
Overcash, Humble O. & R. Co. 1*.
Stubblefield, Humble O. & R. Co. 1, 3.
Davis, Martin & Hines 1.
Elliott, Red Bank Oil Co. 3*.
Parrott, Red Bank Oil Co. 2, 3, 5*.
Elliott, Reiter-Foster Oil Corp. 2.
Graham, Reiter-Foster Oil Corp. 1.
Parrott, Reiter-Foster Oil Corp. 1, 2*.
Lee, Reiter-Foster Oil Corp. 1.
Ellis, Texas Pacific C. & O. Co. 1.
Kelly, Associated Pet. Co. 3.
Mathews, Hoffer Oil Corp. 1.
McKeichen, McGuire et al 1.
Mathews, M. H. Overlees 1.
Rigs, 3; wells drilling, 20; shut down, 5; total, 28.

WICHITA COUNTY

Rigs

Chilson, Perkins, Cullum & Stump 6.
H. S. Griffin-C, Gulf Prod. Co. 2, 3.
Fassett, Leath et al 1.
Ramming, Skelly Oil Co. 7.
Waggoner, The Texas Company 313.
Mitchell-B, White Bros. 4.
Logan et al, W. C. Young 1.

Wells Drilling

Willis, Hotham & Cutcher 1.
Reilly, Magnolia Petroleum Co. 129.
Cook, Magnolia Petroleum Co. 12.
Beach, Magnolia Petroleum Co. 42.
Viles, Magnolia Petroleum Co. 19.
Proctor, Proctor Oil Co. 1.
Beach, Texhoma Oil & Refining and Magnolia Petroleum Co. 1-A*.
Brown, Lambert et la 1*.
Chilson, Simms Oil Co. 1, 2.
Kemp & Kemper, Archer Oil Co. 1.
Ward & Todd, Bridwell & Heydrick 8, 9, 10.
Ward & Todd-E, Clark & Campbell 1.
Ward & Todd-I, Clark & Campbell 1.
Ward & Todd-J, Clark & Campbell 1.
Ward & Todd, Clark et al 9, 10, 11.
Ward & Todd, Clark, Waggoner & Hammond 3.
Hirschi, Compton Oil Co. 2.
Hobson, Craig & Wilson 3.
Waggoner, Culbertson Co. 43.
Burnett, Dale Oil Corp. 14.
Jennings, Dale Oil Corp. 26.
S. B. Burnett et al-A, tract B, Gulf Prod. Co. 39.
Forbes-Burnett, Gulf Prod. Co. 1.
G. Jennings-A, Gulf Prod. Co. 19.
R. J. Miller, Gulf Prod. Co. 63.
Brockridge, Hammon et al 1.
Allingham-A, Hereford Oil Co. 4.
Jennings, J. E. Jones 5.
Fassett & Tuttle, Kimmel & Dillard 2.
Fassett, Magnolia Petroleum Co. 1, 2, 3.
Fassett & Tuttle, Magnolia Petroleum Co. 1.
Honaker, Magnolia Petroleum Co. 72, 14.
Pratt-A, Magnolia Petroleum Co. 18.
Edgerly-A, Geo. Pace 6.
R. Griffin, Panhandle Refining Co. 1.
Douglas Blk. 2, W. A. Patterson 2.
Ramming, Ramming et al 1.
Allen, Ray Art & Consolidated Oil Co. 1.
Bywaters, Red River Oil Co. 40.
Foster & Allen, G. R. Ridgeway 1.
Nance, Ryan Petroleum Co. 83.
Barwise, Sessums et al 1.
Ramming, Skelly Oil Co. 14.
Ward & Todd, Stidham & Thrasher 2.
Waggoner, Stump & Co. 2.
Foster & Saunders, The Texas Company 6.
Waggoner, The Texas Company 307, 312.
Burnett-O, Texhoma Oil & Refining Co. 1.
Burnett, Trinity Prod. Co. 18.
Burnett, Virginia Oil Assn. 26.
Rigs, 8; wells drilling, 59; shut down, 2; total, 69.

WILBARGER COUNTY

Rigs

Waggoner-M, Humble Oil & Refining Co. 14.
Waggoner-A, Phillips Petroleum Co. 14.
Waggoner-H, Phillips Petroleum Co. 9.
Waggoner-N, Phillips Petroleum Co. 1, 2.
Waggoner-O, Phillips Petroleum Co. 7.
Waggoner-T, Phillips Petroleum Co. 6, 8.
Waggoner-Y, Phillips Petroleum Co. 2, 3.
Waggoner-II, Phillips Petroleum Co. 1.
Waggoner-OO, Phillips Petroleum Co. 2.
Waggoner-PP, Phillips Petroleum Co. 3.
Waggoner-QQ, Phillips Petroleum Co. 12, 13.
Waggoner-D, Roxana Petroleum Corp. 2.
Guyer, Stewart et al 1.

Wells Drilling

Allison, Alford Oil Co. 1*.
Stephens-A, Barkley & Meadows 14*.
Stephens, Empire Gas & Fuel Co., 48, 50, 51.
W. T. Waggoner-R, Gulf Prod. Co. 6.
Bond-B, Humble Oil & Refining Co. 14, 16.
Chauncey & Gambrell, Humble Oil & Refining Co. 1.
Waggoner-G, Humble Oil & Refining Co. 7.
Waggoner-H, Humble Oil & Refining Co. 10, 12, 16.
Waggoner-I, Humble Oil & Refining Co. 7, 8.
Waggoner-L, Humble Oil & Refining Co. 2*.
Waggoner-M, Humble Oil & Refining Co. 7, 11, 15*, 16, 17*.
Waggoner-O, Humble Oil & Refining Co. 12.
Waggoner Sec. 26, Kelly et al 1*.
H. & T. C. fee, Magnolia Petroleum Co. 74.
Piper, Magnolia Petroleum Co. 51.
Sumner, Magnolia Petroleum Co. 55.
M. Waggoner, Magnolia Petroleum Co. 1.
Waggoner-A, Milham Corp. 4.
Waggoner-B, Milham Corp. 6.
Waggoner-H, Milham Corp. 1*, 6, 8, 9, 12.
Waggoner-L, Milham Corp. 3, 16.
Waggoner-O, Milham Corp. 1.
Waggoner-E, Murchison & Fain 1.
F. Luhman, Murchison & Fain et al 1.
Waggoner-F, Phillips Petroleum Co. 10.
Waggoner-H, Phillips Petroleum Co. 7, 8*.
Waggoner-L, Phillips Petroleum Co. 4*, 5.
Waggoner-X, Phillips Petroleum Co. 1.
Waggoner-Y, Phillips Petroleum Co .1, 4.
Waggoner-Z, Phillips Petroleum Co. 1.
Waggoner-FF, Phillips Petroleum Co. 1.
Waggoner-HH, Phillips Petroleum Co. 4, 5.
Waggoner-JJ, Phillips Petroleum Co. 3*.
Waggoner-NN, Phillips Petroleum Co. 7, 8, 10, 11.
Waggoner-UU, Phillips Petroleum Co. 5.
Waggoner-A, Prairie Oil & Gas Co. 4.
Waggoner-B, Prairie Oil & Gas Co. 1*, 3.
Kemp et al, Quincy Oil Co*.
Waggoner, C. L. Sloan 2*.
Zipperle, Stockton & Maxwell 1*.
Waggoner, The Texas Company 305.
Waggoner-D, Waggoner Refining Co. 2.
Smith, Wanderer Oil Co. 1.
Milner, Whitehead et al 1*.
Waggoner, Whiteheas, Apple & Brandeberry 1.
Woodward, Wichitex Oil Co. 1*.
Rigs, 17; wells drilling, 53; shut down, 16; total, 86.

YOUNG COUNTY

Rigs

McCaghren, Long et al 5.
Campbell-G, Murchison & Fain 1.
Prideaux, Panhandle Refining Co. 2.
Stewart, The Texas Company 3.
Eddleman Bros., Coones & Hotchkiss 1.
Hatfield, Jacob Oil & Gas Co. 1.
Burgess, Pitzer & West 5.

Wells Drilling

Montgomery, Bloodworth & Kerbow 1.
Raching, Chenault & Lea 8.
Logan, Evans et al 4.
Jones, Godley Oil Co. 1.
Ferguson, Jeffers & Jeffers 1.
Benson, Madden & Hunt 7.
Snider, McElreath, Suggett & Phillips 4.
Stewart, Moran et al 1.
Rogers, Roberts Oil Co. 15.
Stewart, Roberts Oil Co. 2.
Stewart, Ruff et al 4.
Beardon, The Texas Company 17.
Mathews, The Texas Company 1.
Prideaux, The Texas Company 1.
Manley, Wentz Oil Corp. 1.
Boren, Wichita Prod. Co. 9.
Stewart, Wo-Mac Oil Co. 6.
Ford, Atkinson & Sandefer 3.
Morrison Co., Coones & Hotchkiss 1.
Griffin, Humphries Corp. 1*.
Donnell, Liner Drilling Co. 1*.
Donnell, McQuain et al 1*.
Boozer, Nance & Lucas 2.
Keller-C, Pitzer & West 9.
McCleskey, Roeser & Pandleton 1.
Wiley Moore, Transcontinental Oil Co. 1.
Rigs, 7; wells drilling, 23; shut down, 3; total, 33.

MISCELLANEOUS NORTH TEXAS
BAYLOR COUNTY

Wells Drilling

Young, Pandem Oil Corp. & Richards 1.

CLAY COUNTY

Wells Drilling

Donley, British American Oil Co. 1.
Johnson, Cove Oil & Gas Co. 1.
Sanzenbacker, O. H. Foster 1.
Inman-A, Howard Petroleum Co. 2*.
Holloway, Lone Star Gas Co. 23.
Scaling, Atlantic Oil Production Co. 1.
Dowlen & Son, Ferguson et al 1*.
Waggoner, Lone Star Gas Co. 28, 29, 30.
Barry, Richardson Bros. 1.
Wright, Western Oil Corp. 1.

COMANCHE COUNTY

Rigs

Miers, Kirk & Brewer 1.
Gardenshire, Melton Oil Co. 1.
Chapman, Suddereth et al 1*.

Wells Drilling

Campbell, Dublin Dev. Corp. 1.
Braswell, Moore 1.
Kirk, Texas Pacific Coal & Oil Co. 1.

COOKE COUNTY

Rig

Pace, F. P. Zoch 1.

Wells Drilling

Lester, Big Indian Oil Co. 1.
Mitchell, Cochran et al 1.
Dennis, Hooser et al 7.
Kidd, Hudson et al 1*.
Hyman, C. C. Lanier 4, 5.
Hyman, C. C. Lanier et al 6.
Danglemayer, Lynch, Stahl & Burris 1.
Cook, McElreath & Suggett 1.
Hyman, Roxana Petroleum Corp. 1.
Houston, Simpson et al 1.
Hyman, Sun Oil Co. 2, 3.
Kitchens, Vacuum Oil Co. and Big Indian Oil Co. 1.

COTTLE COUNTY

Well Drilling

A. C. Dulaney, J. T. Woodley 1*.

DENTON COUNTY

Well Drilling

Fortenberry, Gainesville Synd. 1.

ERATH COUNTY

Wells Drilling

Barton, Gillett 1*.
Finch, Nelson Oil Synd. 3*.
Smith, Welsh et al 1*.

FANNIN COUNTY

Wells Drilling

Moore, Erwin Prod. Co. 1.
Watkins, Verona Prod. Co. 1.

FOARD COUNTY

Wells Drilling

Burras, Central Oil Ints. 1.
A. T. Miller, Gulf Prod. Co. 1*.
Meusse, G. C. Ward 1.

HARDEMAN COUNTY

Wells Drilling

Wheat, Benedum & Trees 1*.
Nicholson, Pigg, Winnepeg Oil Co. 1.

HASKELL COUNTY

Wells Drilling

Bunkley, Bridwell & Mayfield 1*.
Colbert, Weart & York 1*.

KNOX COUNTY

Wells Drilling

Clark, Brazos Bend Oil Co. 1*.
Lawson, Robert Saunders 1*.

PALO PINTO COUNTY

Rigs

Hart, Dixie Drilling Co. 1.
Seaman, Dixie Drilling Co. 1.
Satterfield Heirs, Morrissey & Rowen 1.

Wells Drilling

Dalton, Dalton Oil Co. 6.
Dalton, Dalton et al 1.
Scudder, Denver Drilling Co. 1.
Owens, Nelson Oil Synd. 1*.
Guest, Chestnut & Smith Corp. 1.
Stuart, Moore & Snebold 5.
Rasmussen, Pender Prod. Co. 2*.
Fee, Texas Pacific Coal & Oil Co. 26.

PARKER COUNTY

Wells Drilling

Stickford, Coffin et al 1.
Davis, Monroe 1*.

WISE COUNTY

Wells Drilling

White, Cosden and Consolidated Oil Co. 1
Houston, Little Co. 1*.
Rigs, 7; wells drilling, 41; shut down, 17; total, 65.

WEST TEXAS
CRANE COUNTY

Rigs

University, Prairie Oil & Gas Co. 1, 2.

Wells Drilling

P. J. Lea, Cranfill Bros. Oil Co. 1*.
Cowden Bros., Duffy Bros et al 1.
J. T. McElroy, Gulf Prod. Co. 2.
Crier-McElroy, Gulf Prod. Co. 1*, 2*, 3*.
State-Lasseter, Gulf Prod. Co .1.
Crier-McElroy, W. H. Dunning 1.
E. S. Hughes, Independent Oil & Gas Co. 1.
O'Keefe, Magnolia Petroleum Co. 2.
Mary Dawson, Marland Oil Co. 1.
E. S. Hughes, Marland Oil Co. 2-C, 3-C.
Gibbs, Marland Oil Co. 1.
H. M. King, The Texas Company 5, 7.
Cowden, Texas Dev. Co. 1*.
Rigs 2; wells drilling, 12; shut down, 5; total, 19.

CROCKETT COUNTY

Wells Drilling

Couch, Cumberland Oil & Gas Co. 1.
Powell, Gulf Prod. Co. 1-D.
Powell, Humble Oil & Refining and Marland Oil Co. 1-B.
Powell, J. K. Hughes Development Co. 2-A, 3-A, 2-B.
Powell, Republic Production Co. 1.
University, Wm. Schaffer et al 1*.
Shannon, Ben Simon et al 1.
University, H. F. Wilcox Oil & Gas Co. 1.
Shannon, Young & Cromwell 1.
University, F. P. Zoch et al 1*.
Rigs, 0; wells drilling, 10; shut down, 2; total, 12.

MITCHELL COUNTY

Rigs

Mary Foster, Magnolia Petroleum Co. 3, 4.
Womack, The California Co. 7.
E. Morrison, Lse. 2, The California Co. 17.
Pettitfils, Lse. 1, The California Co. 3.

Wells Drilling

Womack, Atlantic Oil Production Co. 6, 7.
F. E. McKenzie, B. H. Cogdell 1*.
Francis Adams, Magnolia Petroleum Co. 2.
C. M. Adams, Magnolia Petroleum Co. 6.
Mary Foster, Magnolia Petroleum Co. 2.
G. W. Womack, Magnolia Petroleum Co. 1*.
Ellwood, Mid-Kansas Oil & Gas Co. 2.
C. P. Conoway, Conoway & Sloan 1.
Hardee, Teas & Stivers 1.
C. M. Adams, Lse. 2, The California Co. 4.
J. J. Handley, The California Co. 1.
Pettitfils, The California Co. 2.
Womack, The California Co. 6.
J. J. Ford, Boch et al 1.
Rigs, 5; wells drilling, 13; shut down, 2; total, 20.

REAGAN COUNTY

Rigs

Group 1, University, Texon Oil & Land Co. 62, 63, 64, 65, 66, 67, 8-A, 9-A, 10-A.

Wells Drilling

University, Big Lake Oil Co. 57, 72*, 73, 79*, 80, 82, 83, 87, 88*, 89, 90*, 91*, 92, 93, 94, 95, 96, 97, 98, 99, 101, 102, 103, 104, 105, 106, 8-B.
University, Camp et al 1*.
Sawyer Cattle Co., Marland Oil Co. and Pickerell 1.
Sawyer Cattle Co., Moody Oil Corp. 1.
Boyd, Roxana Petroleum Corp. 1.
Wolters, Ben Simon et al 1.
Group 1, University, Texon Oil & Land Co. 39, 40, 49, 52, 53, 54, 55, 56, 57, 58, 59*, 60, 61, 5-A, 7-A.
Group 2 University, Texon Oil & Land Co. 5.
Rigs, 9; wells drilling, 40; shut down, 8; total, 57.

Rigs

A. S. Burleson, Humble Oil & Refining Co. 5.
Taylor, Independent Oil & Gas Co. 3, 10.
Burleson, Independent Oil & Gas Co. 4.
Emma Wooley, Independent Oil & Gas Co. 5.
M. L. Baker, McMan Oil & Gas Co. 2.
A. S. Burleson, Marland Oil Co. 31, 32.
Estep, Marland Oil Co. 1, 2, 3, 4, 5, 6.
T. E. Shirley, Marland Oil Co. 1.
Estep, Roxana Petroleum Corp. 2, 3.
Hughes, Roxana Petroleum Corp. 2.
Milton Shirk, Texas Pacific Coal & Oil Co. 3, 4.

Wells Drilling

E. S. Hughes, Amerada Petroleum Corp. 1
Burleson, Dixie Oil Co. 8.
E. S. Hughes, Dixie Oil Co. 5, 6, 7.
Sanger, Gulf Production Co. 1.
Shirk-D, Gulf Production Co. 1.
A. S. Burleson, Humble Oil & Refining Co. 3, 4.
J. T. McElroy, Humble Oil & Refining Co. 1.
Taylor, Independent Oil & Gas Co. 5, 7, 8*, 9.
Burleson, Independent Oil & Gas Co. 3.
Emma Wooley, Independent Oil & Gas Co. 3, 4.
Rankin, Kirkwood et al 1*.
Burleson, Marland Oil Co. 25, 26, 27, 28, 29, 30, 33, 34.
Sanger, Marland Oil Co. 14, 15.
Halff, Marland Oil Co. and Texon Oil & Land Co. 1.
Bowen, Roxana Petroleum Co. 3.
Bull, Sartain Bros. and Davis 1*.
Jones, Skelly Oil Co .1.
A. S. Burleson, The Texas Company 1, 3, 4.
King, The Texas Company 8, 9.
Milton Shirk, Texas Pacific Coal & Oil Co. 2.
Shirk, Wentz Oil Corp. (was Johnson & McCamey) 1.
Rigs, 20; wells drilling, 36; shut down, 3; total, 59.

MISCELLANEOUS WEST TEXAS
ANDREWS COUNTY

Rig

Cowden, A. G. Carter and H. Zweifel 1.

BREWSTER COUNTY

Well Drilling

Skinner, J. Rosenborough & Skinner 1.

COCHRAN COUNTY

Rig

Landon, J. C. Whicker 1.

COKE COUNTY

Well Drilling

E. C. Rawlings, Lipan Oil Co. 1*.

CONCHO COUNTY

Wells Drilling

Hartgrove, The Exploration Co. 1.
Schultz, Kemper Kimberlin et al 1.
W. S. See, Culbertson Bros. 1.
Hartgrove, Gene Mays et al 1.

CULBERSON COUNTY

Rigs

Radford, James H. Gardner et al 1.
Kloh & Rumsey, Pure Oil Co. 1.

Well Drilling

C. L. Cass, Plymouth Oil Co. (Big Lake) 1*.

ECTOR COUNTY

Rig

J. S. Slator, The Exploration Co. 1.

Wells Drilling

G. W. Connell, J. S. Cosden et al 1-A.
W. E. Connell, J. S. Cosden et al 1-B.
Kloh & Rumsey, The Exploration Co. 1.
E. P. Cowden, Llano Oil Co. 1.
Henderson, Sid Richardson (Leigh Taliaferro) 1.
W. P. Edwards, Simms Oil Co. 1.
J. W. Buchanan, F. E. Skinner & Eastland 1*.

FISHER COUNTY

Wells Drilling

W. F. Martin, Ideal Oil Co. 1.
J. L. Marberry, E. W. Raney 1.

GAINES COUNTY

Well Drilling

Lindsey, Huconey Oil Co. 1*.

GARZA COUNTY

Wells Drilling

S. M. Swenson, Deep Rock Oil Co. 1.
Connell, Emerald Oil Co. 1-A*.
J. M. Boren, Emerald Oil Co. 1.

GLASSCOCK COUNTY

Wells Drilling

Calder, Mascho and Marland Oil Co. 1.
L. S. Bell, Plateau Oil Co. 1.

HOCKLEY COUNTY

Well Drilling

Ellwood, Ricker & Dodson 1.

HOWARD COUNTY

Rig

Otis Chalk, Marland Oil Co. 4.

Wells Drilling

Roberts, Lockhart & Co. 1.
Hyman (Scott), Lockhart & Co. 1.
Otis Chalk, Lockhart & Co. 1-A.
Mary Chalk, Magnolia Pet. Co. 1.
Otis Chalk, Magnolia Pet. Co. 2, 3.
Otis Chalk, Magnolia Pet. Co. 3-A, (was Owens & Sloan's No. 3 Chalk).
Otis Chalk, Marland Oil Co. 3.
H. R. Clay, Reed, Apperman et al 1.

JEFF DAVIS COUNTY

Wells Drilling

T. M. Wingo, Herbert Oil Co. 1.
W. W. McCutcheon, Humble O. & R. Co. 1.
J. Z. Means, J. K. Hughes Dev. Co. 1.

JONES COUNTY

Rigs

Sears, Gibson & Johnson 1.
Mrs. J. V. Wright, Gibson & Johnson 1.
Mason, Marland Oil Co. 1.
Thornton, Midwest Exploration Co. 1.
Walling, Phillips Pet. Co. 1.

Wells Drilling

S. W. King, Gillette & Hickey 1.
S. R. Cox, Marland Oil Co. 1.
Bristow, Shaw & Rathke et al 1*.
King, Leigh Taliaferro 1.
Rowell, J. C. Yancey et al 1*.
Herndon, J. C. Yancey et al 1*.

KENT COUNTY

Well Drilling

Barron, The Texas Company 1.

KIMBLE COUNTY

Well Drilling

Harrison, Dixie Oil Co. 1.

LAMB COUNTY

Well Drilling

Yellowhouse, E. C. Marrs et al 1.

LOVING COUNTY

Well Drilling

W. L. Allen, Lockhart & Co. 1.

LYNN COUNTY

Well Drilling

C. O. Edwards, Hart Oil Corp. 1*.

McCULLOCH COUNTY
Wells Drilling
Rice, Gibson Oil Co. 1*.
Smith, McClung et al 1*.
Roberts, Van Bibber et al 1*.
MENARD COUNTY
Well Drilling
White, J. R. Lewis et al 1.
MIDLAND COUNTY
Well Drilling
Jones, M. Agress et al 1*.
NOLAN COUNTY
Well Drilling
Arthur Sears, Huconey Gas Co. 1.
PECOS COUNTY
Wells Drilling
J. C. Trees, Benedum & Trees 1.
Hagan (W. W. Batcheler), Buell et al 1*.
Hershenson, Dixie Oil Co. 1.
Scharff Blackman, Cromwell & Kimberlin 1.
Perry, Transcontinental Oil Co. 1.
Townsite, Quinby Oil Co. 1.
PRESIDIO COUNTY
Well Drilling
Tootle estate, Headlock & Miller 1*.
REEVES COUNTY
Wells Drilling
Abram, Schooler, Slack et al 1.
State Land, Gulsham & Hunter 1.
RUNNELS COUNTY
Wells Drilling
Fowler, Red Bank Oil Co. 1.
Buck, F. P. Zoch et al 1.
SCHLEICHER COUNTY
Wells Drilling
J. A. and W. T. Whitten, Beavers & Leath et al 1*.
Sol Meyer, Cope & Dalton 1.
SCURRY COUNTY
Well Drilling
T. C. Stinson, Northwest Co. 1.
STERLING COUNTY
Wells Drilling
E. W. Douthett, Co-Operative Lease & Dev. Co. 1-A*.
C. A. Boone, The Exploration Co. 1.
L. T. Clark, H. D. Rummel 2*.
STONEWALL COUNTY
Wells Drilling
Craft, Arkansas G. & F. Co. 1.
J. Q. Ward, Ward Synd. 1*.
TAYLOR COUNTY
Rig
J. F. Gillespie, Sanger O. & R. Co. 1.
Fee, City of Abilene 1.
R. H. Anderson, Sanger O. & R. Co. 1*, 2.
J. C. Cox, Sanger O. & R. Co. 1*.
TERRELL COUNTY
Wells Drilling
Scott, Sun Oil Co. 1
Robertson, E. T. Williams et al 1.
TERRY COUNTY
Rig
Brownsfield, Kingsland O. & P. Co. 1.
TOM GREEN COUNTY
Wells Drilling
Llano County school land, M. D. Bryant et al 1.
Sorrell, Texon O. & L. Co. and Marland Oil Co. 2.
Pulliam, World Oil Co. 1.
VAL VERDE COUNTY
Rigs
Holman, Curso Williams 1.
Sellers, Hiawatha Oil Co. 1.
Wells Drilling
Moore estate, A. Blume 1.
Russell & Weatherbee, East Del Rio Oil Co. 1*.
Whitehead, Independent Operators 1*.
Harrison, Plateau Oil Co. 1*.
W. S. Stevenson, Transcontinental Oil Co. 1.
WINKLER COUNTY
Wells Drilling
Cowden Cattle Co., R. S. Matthews et al 1*.
John Sealy, F. P. Zoch et al 1*.
T. G. Hendricks, P. A. Westbrook et al 1.
Sealy, Leigh Taliaferro 1.
J. W. Amburgey, L. D. Ladd et al 1.
Kloh & Rumsey, Brandon & McCamey 1.
Rigs, 15; wells drilling, 64; shut down, 27; total, 106.

TEXAS PANHANDLE

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carson	8	5 0	3	0
Gray	3	457	0	0
Hutchinson	102	32.102	0	4
Wheeler	2	0	0	3
Total Sept.	115	33.089	3	6
Total August	107	67.915	2	2
Difference	8	34.826	1	4

Rigs and Wells Drilling

County—	Rigs	Drg.	S.D.	Ttl.
Carson	7	24	4	35
Gray	16	81	5	102
Hutchinson	89	251	62	392
Wheeler	6	12	4	22
Miscellaneous	11	29	18	58
Grand total September	129	397	83	609
Grand total August	122	392	62	576
Increase	7	5	21	33

CARSON COUNTY
Rigs
Sec. 115, Blk. 5, Burnett, American Refining Co. 8.
Sec. 60, Blk. 2, Deeds W. A. Gamble 1.
Sec. 116, Blk. 5, Burnett, Marland Oil Co. 7-A.
Sec. 107, Blk. 4, Bryan, Munn & McAuley 1.
Sec. 22, Blk. Y-2, Poling, Navaho 1.
Sec. 89, Blk. 5, Burnett, The Texas Company 5.
Sec. 127, Blk. 5, Burnett, The Texas Company 9.
Wells Drilling
Sec. 22, Blk. Y-2, Poling, Amatex Oil Co. 2*.
Sec. 115, Blk. 5, Burnett, American Refining Co. 3-A, (6*), 10.
Sec. 127, Blk. 5, Burnett, Empire Gas & Fuel Co. 1.
Sec. 107, Blk. 5, Burnett, Gates Oil Co. 2.*
Sec. 1, Blk. 7, Witter, Gibson Oil Co. 1.
Sec. 116, Blk. 5, Burnett, Gulf Production Co. 12, 18, 20.
Sec. 106, Blk. 5, Burnett, Gulf Production Co. 15, 19.
Sec. 128, Blk. 5, Burnett, Gulf Production Co. 16, 17.
Sec. 12, Blk. 4, Burnett, Humble Oil & Refining Co. 1.
Sec. 127, Blk. 5, Burnett, Humble Oil & Refining Co. 1.
Sec. 115, Blk. 5, Burnett, Magnolia Petroleum Co. 3.
Sec. 116, Blk. 5, Burnett, Marland Oil Co. 2-A.* 6-A.
Sec. 127, Blk. 5, Burnett, Marland Oil Co. A-5.
Sec. 105, Blk. 5, Burnett, Marland Oil Co. 2-C, 3-C.
Sec. 117, Blk. 4, Burnett, Marland Oil Co. 1-E.
Sec. 5, Blk. 5, Deahl, Prairie Oil & Gas Co. 1.
Sec. 103, Blk. 4, Garner, Republic Production Co. 1.
Sec. 92, Blk. 4, Bryan, Roxana Petroleum Corp.
Sec. 115, Blk. 5, Burnett, W. W. Silk 6.
Sec. 92, Blk. 5, Burnett, The Texas Company.
Sec. 114, Blk. 4, Brown, White Deer Oil Co. 1.
Rigs, 7; wells drilling, 24; wells shut down, 4; total, 35.

GRAY COUNTY
Rigs
Sec. 111, Blk. B-2, Furneaux, Archer Blake 1.
Sec. 60, Blk. B-2, Jackson, Canyon Oil Co. 1.
Sec. 12, Blk. 25, Crews, H. B. Ellers 1.
Sec. 83, Blk. 3, Worley, Greenwood et al 1.
Sec. 83, Blk. 3, Worley & Reynolds, Gulf Production Co. 5.
Sec. 83, Blk. 3, Worley & Reynolds, Humble Oil & Refining Co. 2.
Sec. 87, Blk. 3, Merten, Humble Oil & Refining Co. 6.
Sec. 152, Blk. 3, Heitholt, Magnolia Petroleum Co. 1.
Sec. 82, Blk. 3, Merten, Magnolia Petroleum Co. 5, 16.
Sec. 86, Blk. 3-B, Worley & Reynolds, McMan Oil & Gas Co. 6.
Sec. 212, Blk M-2, White, Henry Reiley 1.
Sec. 66, Blk. B-2, Hopkins, Riley & Heck 1.*
Sec. 83, Blk. 3, Worley & Reynolds, Sun Oil Co. 3.
Sec. 44, Blk. 25, Buck, Travis 1.
Sec. 114, Blk. M-2, Palley, Weir Briggs & Finklea 1.*
Wells Drilling
Sec. 92, Blk. B-2, Bowers, Barnett et al 1.*
Sec. 148, Blk. B-2, Bradford, Bayshore Petroleum Co. 1.*
Sec. 33, Blk. 25, Dial, Constantine et al 1.
Sec. 10, Blk. A-6, Noble, Cranfill 1.
Sec. 64, Blk. 3, Benton, Empire Gas & Fuel Co. 1.
Sec. 129, Blk. 3, Hughey, Empire Gas & Fuel Co. 1.
Sec. 161, Blk. 3, Wall, Empire Gas & Fuel Co. 1.
Sec. 63, Blk. 3, Worley, Empire Gas & Fuel Co. 1.
Sec. 26, Blk. B-2, Lovett, Greenwood et al 1.
Sec. 87, Blk. 87, Holmes, Gulf Production Co. 1.
Sec. 175, Blk. 3, McConnell, Gulf Production Co. 1.
Sec. 88, Blk. 3, Merten, Gulf Production Co. 1.
Sec. 83, Blk. 3, Worley, Gulf Production Co. 1, 2, 3, 4.
Sec. 87, Blk. 3, Merten, Humble Oil & Refining Co. 1, 2, 3, 4.* 5.
Sec. 86, Blk. 3, Osborne, Humble Oil & Refining Co. 1.
Sec. 83, Blk. 3, Worley & Reynolds, Humble Oil & Ref. Co. 1, 3, 4, 5.
Sec. 17, Blk. 1, Williams, Magdalene Oil Co. 1.
Sec. 82, Blk. 3, Merten, Magnolia Petroleum Co. 1, 2, 3, 4, 6, 7, 8, 9, 11, 12, 13, 14, 15.
Sec. 63, Blk. 3, Benton, Marland Oil Co. 1.
Sec. 87, Blk. 3, Merten, McMan Oil & Gas Co. 1.
Sec. 83, Blk. 3, Worley & Reynolds, McMan Oil & Gas Co. 1, 2, 3, 4, 5, 7, 8.
Sec. 68, Blk. 25, Morris, Obrien 1.*
Sec. 90, Blk. 3, Cabbell, Pampa Oil Co. 1.
Sec. 86, Blk. 3, Davis, Phillips Petroleum Co. 1.
Sec. 82, Blk. 3, Merten, Phillips Petroleum Co. 1, 2.
Sec. 63, Blk. 3, Benton, Pure Oil Co. 1, 2, 3.
Sec. 86, Blk. 3, Davis, Pure Oil Co. 1.
B. Chaney Survey, Finley, Roxana Petroleum Corp. 1.
Sec. 82, Blk. 3, Merten, Shamrock Petroleum Corp. 2, 3, 4, 5.
Sec. 83, Blk. 3, Worley & Reynolds, Shamrock Pet. Corp. 2, 3, 4, 5, 6.
Sec. 83, Blk. 3, Worley & Reynolds, Sun Oil Co. 1, 2.
Sec. 87, Blk. 3, Holmes, The Texas Co. 1, 2, 3, 4.
Sec. 62, Blk. 3, Worley & Reynolds, Wilcox-Pampa Oil Co. 5, 7, 8, 9, 10, 11.* 12, 13, 14.
Sec. 106, Blk. 3, Holmes, Young et al 1.
Rigs, 16; wells drilling, 81; wells shut down, 5; total, 102.

HUTCHINSON COUNTY
Rigs
Sec. 21, Blk. 47, Whittenberg, Amerada Petroleum Corp. 3.* 4-A.
Sec. 3, Blk. B-4, Prichard, Barnsdall 1, 2.
Sec. 8, Blk. Y, Smith, Block Y Petroleum Co. 1.
Sec. 40, Blk. M-21, Harvey, Burge et al 1.
Sec. 10, Blk. Y, Smith, Currie et al 1.
Sec. 7, Blk. Y, Smith, Curry & Holmes 1.
Sec. 20, Blk. Y, Johnson, Derby Oil Co. 2, 3.
Tract 3, M. Whitley Johnson, Devonian Oil Co. 6.
Sec. 6, Blk. Y, Kingsland, Dixon Creek Oil Co. 1.
Sec. 7, Blk. Y, Smith, Dixon Creek Oil Co. 37.
Sec. 21, Blk. Y, Johnson, Dunnington et al 2.
Sec. 11, Blk. Y, Smith, Echo Oil Co. 1.
Sec. 68, Blk. 46, Johnson, Empire Gas & Fuel Co. 5-A.
Sec. 21, Blk. Y, Johnson, Empire Gas & Fuel Co. 2-B.
Coble, Get Oil Co. 1.
Sec. 6, Blk. Y-2, Bass, Golden Eagle Oil Co. 1.
Blk. 1, Dial, Gulf Prod. & Panhandle Ref. Co. 27, 28, 29.
Sec. 25, Blk. 47, Gulf Prod. & Panhandle Ref. Co. 31.
Sec. 31-A, Blk. B, Christian, W. Scott Heywood 3.
Sec. 14, Blk. Y, Smith, Phillips-Heywood 3.
Sec. 18, Blk. Y, Weatherly, Homestead Oil Co. 1.
Sec. 6, Blk. B-4, Kingsland, Hughes 8-B.
Sec. 8, Blk. M-21 King, Hughes 1-C.
Sec. 11, Blk. Y, Smith, Japhet 6.
Sec. 13, Blk. Y, Whittenberg, Kistler Lenix 2.
Sec. 4, Blk. B-3, Cockrell, McIlroy Bros. 1.
Sec. 5, Blk. Y, Dick, Midwest Exploration Co. 2.
Sec. 13, Blk. Y, Whittenberg, Midwest Exploration Co. 1, 2, 3, 5, 6.
Sec. 2, Blk. B-3, Cockrell, Navajo Oil Co. 1.
M. Whitely Survey, Burg, Phillips Petroleum Co. 3.
Sec. 12, Blk. Y, Whittenberg, Phillips Pet. Coble Oil Co. 20, 21, 22.
Sec. 69, Blk. 46, Johnson, Phillips-Curse 1.
Sec. 64, Blk. 46, Johnson, Phillips Pet.-Dorsett 2.
Sec. 64, Blk. 46, Whittenberg, Phillips Pet.-Dorsett 3.
Sec. 69, Blk. 46, Johnson, Phillips Pet.-Easter 1.
Tomlinson Survey, Whittenberg, Phillips Pet.-Elra 2, 3, 5, 8.
Sec. 6, M. Whitley, Johnson, Phillips Pet.-Finklea 2, 3.
Sec. 26, Blk. 47, George, Phillips Petroleum Co. 1, 2.
Sec. 21, Blk. Y, Gordon, Phillips Petroleum Co. 7.
Sec. 6, Blk. B-4, Phillips-King, Phillips Petroleum Co. 4.
Sec. 4, Blk. Y, Kingsland, Phillips Pet.-Jeanette 3.
M. Whitley Survey, Whittenberg, Phillips Pet.-Patton 7, 8, 9, 19, 11.
Sec. 12, Blk. Y, Smith, Phillips, Smith & Capers 7.
M. Whitely Survey, Whittenberg, Phillips Pet.-Gibson 5.
Sec. 65, Blk. 46, Whittenberg, Phillips Pet.-Whitt. 2.
Sec. 70, Blk. 46, Johnson, Phillips Pet.-Wiley 1.
W. C. Christian, Christian, Plains Drilling Co. 2.
Sec. 24, Blk. M-21, Hale, Pole Cat Oil Co. 1.
Sec. 21, Blk. Y, Johnson, Prairie Oil & Gas Co. 28-A, 30-A, 32-A, 34-A.
Sec. 20, Blk. Y, Johnson, Prairie Oil & Gas Co. 31-A.
Sec. 63, Blk. 46, Johnson, Prairie Oil & Gas Co. 33-A.
Sec. 27, Blk. Y, Diana Shaw, Prairie Oil & Gas Co. 2.
Sec. 9, Blk. M-15, Jones, Premier Oil Co. 1.
Sec. 22, Blk. M-23, Starnes, Rock Island Oil Co. 1.
M. Whitley Survey, Johnson, Ryan Construction Co. 4.
Sec. 4, Blk. B-4, Cunningham, Skelly Oil Co. 4.
Sec. 20, Blk. Y, Johnson, Skelly Oil Co. 11, 12.
Sec. 22, Blk. 5, Whittenberg, Skelly Oil Co. 4.
Sec. 6, Blk. Y, Kingsland, Skla-Tex Oil Co. 5.
Sec. 13, Blk. Y, Whittenberg, Summit Oil Co. 3.
Sec. 14, Blk. Y, Smith, Sunburst Oil Co. 3, 4.
Sec. 12, Blk. Y, Whittenberg, Sunny Jim Oil Co. 4.
Sec. 8, Blk. B-3, Cockrell, Swindler Oil Co. 1.
Sec. 4, Blk. Y, Kingsland, Wall & Morrison 1.
Wells Drilling
Sec. 20, Blk. 47, Whittenberg, Amerada Pet. Corp. 3.
Sec. 21, Blk. 47, Whittenberg, Amerada Pet. Corp. 3.
Sec. 89, Blk. Z, Whittenberg, Amerada Petroleum Corp. 5-B.
Sec. 19, Blk. Y, Weatherly, American Refining Co. 1, 2.* 3.
Sec. 1, Blk. J, Yake, Anderson & Prichard 1.
Sec. 5, Blk. M-23 Lewis, Badger Oil Co. 2.
Sec. 3, Blk. B-4, Prichard, Barnsdall 1.
Sec. 37, Blk. 47, Merchand, Big Creek Oil Co. 1.*
Sec. 13, Blk. Y, Whittenberg, Brookins & Kistler 1, 2.
Sec. 14, Blk. Y, Smith, Buffalo Oil Co. 1.
Sec. 4, Blk. Y, Kingsland, Canadian Oil Co. 5.
Sec. 12, Blk. Y, Whittenberg, Canyon Oil Co. 1, 4.* 5, 6.
Sec. 1, Blk. B-4, Pritchard, Center Dome Oil Co. 2.*
Sec. 35, Blk. 47, Yake, Clark & Hagy 1.*
Sec. 12, Blk. Y, Whittenberg, Coble-Whittenberg 1.
Sec. 14, Blk. Y, Smith, Cockrell McIlroy 3, 4.
Sec. 14, Blk. Y, Smith Currie-Phillips 2, 3, 4.
Sec. 20, Blk. Y, Johnson-Grace, Delmar Oil Co. 2, 3.* 4.*
Tract 3, M. Whitley, Johnson, Devonian Oil Co. 4, 5.*
Sec. 66, Blk. 46, Johnson, Devonian Oil Co. 1-A.
Sec. 11, Blk. Y, Smith, Dixon Creek Oil Co. 11.*
Sec. 14, Blk. Y, Smith, Dixon Creek Oil Co. 12.* 17-A, 19, 20.
Sec. 12, Blk. Y, Smith, Dixon Creek Oil Co. 25, 26, 27.* 28.*
Sec. 5, Blk. Y, Smith, Dixon Creek Oil Co. 35.
Sec. 23, Blk. M-23, Jasper, Dominion Oil Co. 1.
Sec. 24, Blk. M-21, Haile, Donald Oil Co. 1.
Sec. 15, Blk. X-02, Whittenberg, Douglas Oil Co. 2B, 4.
Sec. 13, Blk. Y, Whittenberg, Dunnigan et al 2.*
Sec. 11, Blk. Y, Smith, Echo Oil Co. 3.
Sec. 68, Blk. 46, Johnson, Empire Gas & Fuel Co. 2-A, 3-A, 4-A.
Sec. 21, Blk. Y, Johnson, Empire Gas & Fuel Co. 3-B.*
Sec. 19, Blk. Y, Weatherly, Empire Gas & Fuel Co. 3, 4, 5, 6, 7, 8, 9.
Sec. 1, Blk. LA, Harvey, Flanders Oil Co. 1.
Wm. Heath, Survey, Carver, Flowers & Marland Oil Co. 1.
Sec. 19, Blk. Y, Weatherly, Fly-Blackburn 2.
Sec. 4, Blk. Y, Kingsland, Four Y Oil Co. 1.
Sec. 18, Blk. M-23 McCormick, Gibson Oil Co. 1.*
Sec. 27, Blk. 47, Whittenberg, Goldeline Oil Co. 1-A.
Sec. 83, Blk. Z, Whittenberg, Goldeline Oil Co. 2-B.
Sec. 24, Blk. 47, Whittenberg, Goldeline Oil Co. 1-C.
Sec. 15, Blk. X-02, Whittenberg, Goldeline Oil Co. 1-H.
Sec. 8, Blk. M-23, Lewis, Gopher Oil Co. 1.
Sec. 128, Blk. 5, Burnett, Gulf Production Co. 16.
Sec. 3, Blk. Y, Cockrell, Gulf Production Co. 1-A, 2.* 3.* 4.*
Sec. 1, Blk. Y, Dial, Gulf Production & Panhandle Ref. Co. 16.*
Sec. 25, Blk. 47, Dial, Gulf Production Co. 17.* 19.* 20.
Sec. 1, Blk. 1, Whittenberg, Gulf Prod.-Dial 24.* 25.*
Sec. 16, Blk. X-02, Dial, Gulf Production & Panhandle Ref. Co. 26.
Sec. 1, Blk. X-02, Dial, Gulf Production & Panhandle Ref. Co. 30.
Sec. 21, Blk. 47, Cline Fee, Gulf Production Co. 2.
Sec. 66, Blk. 46, Johnson, Gulf Production Co. 4.* 5.* 6, 8.
Sec. 70, Blk. 46, Johnson, Gulf Production Co. 9, 10.* 11, 12.
Sec. 75, Blk. 46, Sandford, Gulf Production Co. 1.
M. Whitley Survey, Whittenberg, Gulf Production Co. 4, 5.
M. Whitley Survey, Whittenberg, Gulf Production Co. 1.
Tract 32, M. Whitley, Whittenberg, Gulf Production Co. 2-A.
M. Whitley Survey, Whittenberg, Gulf Production Co. 6-A, 7-A, 8-A.
Sec. 1, Blk. 31, Whittenberg, Gulf Production Co. 9-A.
Sec. 89, Blk. Z, Whittenberg, Gulf Prod. & Panhandle Ref. Co. 4-B.
Sec. 65, Blk. 46, Whittenberg, Gulf Prod. & Panhandle Ref. Co. 2-E.*
Sec. 65, Blk. 46, Whittenberg, Gulf Production Co. 3-E.* 4-E.* 5-E.
Sec. 66, Blk. 46, Johnson, Hagy 1.
Sec. 33, Blk. M-21, Harvey, Harvey 1.
Sec. 5, Blk. Y, Smith Herring McIlroy 5, 6.
Sec. 31-A, Blk. B, Christian, W. Scott Heywood 2.
Sec. 14, Blk. Y, Smith, Heywood & Phillips 2.
Sec. 12, Blk. Y, Smith, Holmes et al 2.
Sec. 6, Blk. Y, Kingsland, Hughes 8-A, 16-A.
Sec. 6, Blk. B-4, Kingsland, Hughes 3-B, 4-B, 5-B.
Sec. 6, Blk. B-4, King, Hughes 7-B.
Sec. 11, Blk. Y, Smith, Japhet Oil Co. 3, 4.* 5.
Sec. 21, Blk. Y, Johnson, Kistler 1, 2.
Sec. 13, Blk. Y, Whittenberg, Kistler Lenix 1.
Sec. 5, Blk. Y, Smith, Lenix Oil et al 1.
Sec. 11, Blk. Y, Smith Lenix & Stovel 2.
Sec. 11, Blk. Y, Smith, Lucky Ten Oil Co. 2.* 3.* 4.*
Sec. 22, Blk. Y, Johnson, Manhatten Oil Co. 1.
Sec. 6, Blk. 1, Johnson, Marland Oil Co. 1.
Sec. 20, Blk. Y, Johnson, Marland Oil Co. 5-A, 6-A, 7-A, 8-A.
Sec. 16, Blk. X-02, Perkins-Dial, Marland Oil Co. 1-A.
Sec. 78, Blk. 46, River Bed, Marland Oil Co. 1.
Sec. 19, Blk. Y, Weatherly, Marland Oil Co. 3-A, 4-A, 4-B, 3-B, 3-C.
Sec. 65, Blk. 46, Whittenberg, Marland Oil Co. 3, 4.
M. Whitley Survey, Whittenberg, Marland Oil Co. 4-A, 8-A, 9-A, 10-A, 11-A, 12-A, 13-A.
Sec. 15, Blk. Y, Smith, Marland Oil Co. & Wright 1.
Sec. 9, Blk. M-15, Jones, McMillan 1.
Sec. 14, Blk. Y, Smith, W. W. McIlroy 1, 2.
Sec. 14, Blk. Y, Smith, McIlroy et al 3.
Sec. 14, Blk. Y, Smith, McIlroy & Kistler 4, 5, 6.*
Sec. 14, Blk. Y, Smith, S. D. & W. W. McIlroy 7.* 8.
Sec. 12, Blk. Y, Smith, McKnight & Holmes 3.
Sec. 5, Blk. Y, Servey Holmes, McMan Oil & Gas Co. 7, 8.
Sec. 21, Blk. Y, Johnson, Martin Gray, McMan Oil & Gas Co. 2, 3.* 4.
Sec. 66, Blk. 46, Wheatley, McMan O. & G. Co. 3.
Sec. 7, Blk. Y, Smith-Kingsland, Middleton et al 1.*
Sec. 5, Blk. Y, Dick, Midwest Exploration Co. 1
Sec. 70, Blk. 46, Johnson, Midwest Exploration Co. 1.
Sec. 5, Blk. Y, Smith, Midwest & Holmes & Curry 2*, 3.
Sec. 5, Blk. Y, Holmes-Smith, Midwest Exploration Co. 4.
Sec. 12, Blk. Y, Smith Tyrell, Midwest Exploration Co. 1.
Sec. 12, Blk. Y, Terrell, Midwest Exploration Co. 2, 3.
Sec. 20, Blk. Y, Johnson, Minnehoma 1.
Twitchell Survey, Twitchell, Murchison & Fain 2.
Sec. 3, Blk Y, Cockrell, Newby Oil Co. 2.
Sec. 59, Blk. M-23, Luginvyhl, Pan Field Oil Co. 1.
Sec. 5, Blk. Y, Smith, Panhandle Refining Co. 1.
Sec. 82, Blk. 46, Sandford, Paramount 1.
Sec. 5, Blk. Y, Smith, Phillips Jr. 1.
Sec. 12, Blk. Y, Smith, Phillips Pet. Co. et al 2.
Sec. 12, Blk. Y, Smith, Phillips Pet. Co. et al 3.
Sec. 12, Blk. Y, Smith-Capers, Phillips Pet. Co. et al 4.
Sec. 54, Blk. 46, Bivins, Phillips Petroleum Co. 1.
M. Whitley Survey, Burg, Phillips Petroleum Co. 1, 2, 4, 5.
M. Whitley Survey, Whittenberg, Phillips Petroleum Co-Brron 1.
Sec. 13, Blk. Y, Whittenberg, Phillips Petroleum Co.-Coble 16, 17, 18, 19.
Tomlison Survey, Whittenberg, Phillips Petroleum Co.-Elra 1, 4, 6, 7.
Sec. 2, M. Whitley, Whittenberg, Phillips Pet. Co.-Florence 1.
Sec. 21, Blk. Y, Johnson, Phillips Petroleum Co.-Gordon 2, 3, 4, 5, 6.
Tract 5, M. Whitley, Johnson, Phillips Petroleum Co.-Graham 2.
Sec. 6, Blk. B-4, Kingsland, Phillips Petroleum Co. 2.
Sec. 4, Blk. Y, Jeanette- Kingsland, Phillips Petroleum Co. 1. 2
Sec. 28, Blk. Y, Johnson, Phillips-Whitehead 1.
Sec. 6, Blk. B-4, Klausing-Kingsland, Phillips Pet. Co.-Whitehead 1.
Sec. 1, Blk. X-02, Martin, Phillips Petroleum Co. 1, 2, 3, 4.
Sec. 66, Blk. 46, Johnson, Phillips Montford 1.
Sec. 68, Blk. 46, Neil, Phillips Petroleum Co. 1.*
M. Whitley Survey, Whittenberg, Phillips Pet. Co.-Patton 3, 4.* 5.* 6.
Sec. 67, Blk. 46, Whittenberg, Phillips Pet. Co.-Patburg 1, 2, 3.
Sec. 13, Blk. Y, Whittenberg, Phillips Pet. Co.-Parks 3.
Sec. 2, Perkins, Phillips Petroleum Co. 2.
Sec. 12, Blk. Y, Smith, Phillips-Smith & Capers 4, 5, 6.
Sec. 6, M. Whitley, Whittenberg, Phillips Pet. Co.-Walling 1.
Sec. 63, Blk. 46, Whittenberg, Phillips Petroleum Co. 8, 9.

M. Whitley Survey, Whittenberg, Phillips Pet. Co.-Gibson 2, 3, 4.
Sec. 65, Blk. 46, Whittenberg, Phillips Pet. Co.-Whitt 1, 3, 4.
Sec. 12, Blk. Y, Whittenberg, Phillips Pet. Co. 4.
W. C. Christian, Christian, Plains Drilling Co. 1.
Sec. 64, Blk. 46, Johnson, Prairie Oil & Gas Co. 3-A, 4-A,* 17-A,* 20-A.
Sec. 20, Blk. Y, Johnson, Prairie Oil & Gas Co. 6-A, 7-A, 18-A, 19-A, 21-A, 23-A, 24-A.
Sec. 21, Blk. Y, Johnson, Prairie Oil & Gas Co. 15-A.* 22-A, 25-A, 26-A, 27-A.
Sec. 69, Blk. 46, Johnson, Prairie Oil & Gas Co. 3-B, 4-B.
Sec. 19, Blk. Y, Weatherly, Prairie Oil & Gas Co. 7.
Sec. 70, Blk. 46, Johnson, Pure Oil Co. 1-B.
Sec. 11, Blk. Y, Smith, Relief Oil Co. 2.* 4.
Sec. 12, Blk. Y, Smith, Henry Riley 1.
Sec. 11, Blk. Y, Smith, Riley & Holmes 2.*
Sec. 86, Blk. 46, Bivins, Roxana Petroleum Corp. 1.*
Sec. 14, Blk. Y, Smith, Roxana Petroleum Co. 4.
M. Whitley Survey, Whittenberg, Shamrock Petroleum Co. 1, 3, 4.
Sec. 95, Blk. 5-T, Jarvis, W. W. Silk 1.
Sec. 43, Blk. 47, Williams, Sinclair Oil & Gas Co. 1.
Sec. 20, Blk. Y, Johnson, Skelly Oil Co. 2.* 5, 6, 7, 8, 9, 10.
Sec. 3, Blk. B-4, Pritchard Breen, Skelly Oil Co. 1.
Sec. 3, Blk. B-4, Pritchard-Griffin, Skelly Oil Co. 1.
Sec. 6, Blk. Y, Kingsland, Skin-Tex Oil Co. 3.
Sec. 50, Blk. Y, Smith, Spring Creek Oil Co. 4.
Sec. 33, Blk. Z, Lydl, Sunrise Oil Co. 1.*
Sec. 132, Blk. 5, Burnett, The Texas Company 7.
Sec. 1, Tomlinson, Johnson, Tex-O Oil Co. 1.
Sec. 6, Blk. Y, Kingsland, Travelers Oil Co. 3.
Sec. 5, Blk. Y, Smith Triangle Oil Co. 1, 4.
Sec. 3, Blk. Y, Cockrell, Ward & Snell 2.
Sec. 34, Blk. 47, Merchant, Wentz Oil Co. 1
Sec. 13, Blk. Y, Whittenberg, Westex Oil Co. 6.* 9.
Sec. 4, Blk. B-4, Johnson-Grace, White Eagle Oil & Refining Co. 2.
Hedgecoke, White Eagle Oil & Ref. Co. 1, 2, 3, 4.
Sec. 64, Blk. 46, Hagy-Johnson, White Eagle Oil & Ref. Co. 8.* 3, 4.
Lot 4, Johnson & Underwood, White Eagle Oil & Ref. Co. 1.
Sec. 11, Blk. Y, Smith, White Eagle Oil & Refining Co. 2.
Rigs, 89; wells drilling, 251; wells shut down, 52; total, 392.

WHEELER COUNTY
Rigs
Sec. 40, Blk. 24, Farris, J. B. Oil Co. 1.
Sec. 41, Blk. B-24, Phillips, Gibson Oil Co. 2.
Sec. 88, Blk. A-5, Jackson, Smith et al 1.
Sec. 1, Blk. 24, Griswold, Upham Gas Co. 1.
Sec. 92, Blk. 17, Strickey, Upham Gas Co. 1.
Sec. 11, Blk. 27, Jackson, World Oil Co. 1.
Wells Drilling
Sec. 42, Blk. 24, Bentley, Gibson Oil Co. 1.*
Sec. 41, Blk. 24, Phillips, Gibson Oil Co. 4.
Sec. 61, Blk. 24, Porter, Hill, Cook & Riley 1.
Sec. 10, Blk. 27, Laycock, Laycock et al 1.
Sec. 12, Blk. 27, Company, Mid-Kansas Oil & Gas Co. 1.
Sec. 55, Blk. 24, Grinkley & Crain, Murchison & Fain 1.
Sec. 1, Blk. 24, Jones, Rook Oil Co. 1.
Sec. 11, Blk. 27, Jackson, Scott, Allen & Bledsoe 1.
Sec. 11, Blk. 27, Jackson, Scott & Varner 1.*
Sec. 53, Blk. 4-A, Sorenson, South Vernon Oil Co. 1.*
Sec. 40, Blk. 24, Smith, The Texas Co. 1
Sec. 12, Blk. 27, Company, Texhoma Oil & Ref. Co. 1.
Sec. 88, Blk. 17, George, Upham Gas Co. 1.*
Sec. 89, Blk. 17, Martin, Upham Gas Co. 1.
Sec. 77, Blk. 7-T, Gorman, Vaughn et al 2.
Sec. 13, Blk. A-5, Woodley, Woodley 1.
Rigs, 6; wells drilling, 12; wells shut down, 4; total, 22.

MISCELLANEOUS PANHANDLE
ARMSTRONG COUNTY
Wells Drilling
Sec. 3, Hooper & Wade, Puckett, Red Hill Corp. 1.

CHILDRESS COUNTY
Wells Drilling
Smith, Gibson Oil Corp. et al 1.

COLLINGSWORTH COUNTY
Rigs
Wilson (Scott), Harmon & Deems 1.
Sec. 107, Blk. 22, McDowell, Von Allmen et al 1.
Wells Drilling
Sec. 5, Blk. 13, Williams et al, Gibson Oil Corp. 1.
Sec. 30, Blk. 16, T. V. Norwood, Martin et al 1.*

DALLAM COUNTY
Wells Drilling
Sec. 9, Blk. 47½, Fee, James et al 1.

DONLEY COUNTY
Wells Drilling
Sec. 39, Blk. C-3, F. E. Harrington, A. T. Drilling Co. 1.*

HALL COUNTY
Wells Drilling
C. M. Bass, Midwest Drilling Co. 1.*

HANSFORD COUNTY
Wells Drilling
Sec. 50, Blk. 2, F. A. Davis, F. W. Dilla et al 1*.
Whitson, Oklavania Oil Co. 1.

HARTLEY COUNTY
Rigs
Sec. 3, Blk. L-S, E. S. Collins, J. B. McKanna 1.
Sec. 10, Blk. 22, Francis Farwell et al J. B. McKanna 1.
Wells Drilling
Sec. 9, Blk. 2, Lyman & Balfour, Deep Rock Oil Co. 1.
Sec. 13, Blk. 13, J. B. Irving, Eslick et al 1.
Sec. 58, Blk. X-R, G. B. Coots, W. W. Holmes 1.
Sec. 63, J. M. Shelton, Humble Oil & Refining Co. 1.*
Sec. 29, Blk. 202, J. M. Shelton Est., J. B. McKanna 1.*
Sec. 1, Blk. B-8, J. M. Shelton Est., Kork Oil Co. 1.*

HEMPHILL COUNTY
Rigs
Sec. 40, Blk. A-2, J. E. George, Mitchell et al 1.
J. Fanning, Shaller Est., McCockrel et al 1.
Wells Drilling
Poitevent, Alexander, Dorning et al 1.*
Sec. 4, Shaller Est., Hoover et al 1.*
J. S. Hood, Fee, Hoover et al 1.

LIPSCOMB COUNTY
Rigs
Mrs. H. D. May, Everett et al 1.
Wells Drilling
A. Barton, Snyder et al 1.

MOORE COUNTY
Rigs
Sec. 237, Blk. 44, John Lowrey, Shadler Bros. 1.
Wells Drilling
Sec. 59, Blk. O-18, Masterson-J, Amarillo Oil Co. 1.
Sec. 19, Blk. 44, Terry Thompson, Amarillo Oil Co. 2.*
Sec. 68, Blk. 3, J. T. Sneed Jr., Cadman et al 1.*
Sec. 16, Blk. M-21, O. E. Cober, Shamrock Petroleum Co. 1.
Sec. 112, Blk. 44, H. W. Beauchamp, Douglas Oil Co. 1.
Sec. 25, Blk. 1, J. T. Sneed Jr., Flowers & Marland Oil Co. 1.
Sec. 28, Blk. 44, Kilgore, Humble Oil & Refining Co. 1.*
N. Jones, Sneed, Phillips Petroleum Co. 1.*
Sec. 58, Blk. 6-T, J. T. Sneed Jr., Masters Oil Co. 1.
Sec. 191, Blk. 3-T, Rubert, Morton & Co. 1-H.
Sec. 26, Blk. 6-T, Sneed, Prairie Oil & Gas Co. 2.
Sec. 30, Blk. 6-T, Sneed, The Moore County Oil Co. 1.
Sec. 16, Blk. M-1, O. E. Cober, Shamrock Petroleum Co. 1.

OCHILTREE COUNTY
Wells Drilling
Sec. 579, Blk. 43, Stickler, W. G. Burton 1.
Sec. 144, Blk. 43, R. E. Wamble, Hamilton et al 1.*
Sec. 471, Blk. 43, R. H. Moore, McCorkle Pipe Line Co. 1.

POTTER COUNTY
Rigs
Sec. 6, Blk. Z-6, G. A. Carey, California Co. 1.
Wells Drilling
Sec. 25, Blk. O-18, Lee Bivins-A, Amarillo Oil Co. 5.
Sec. 4, Fuqua, Amarillo Oil Co. 1.
Sec. 89, Blk. 9, W. H. Bush, Gulf Production Co. 1.
J. A. Jones, Farmers Oil & Gas Co. 1.

ROBERTS COUNTY
Rigs
Sec. 179, Blk. 42, A. H. Tandy, Pan-State Oil Co. 1.
Wells Drilling
Sec. 109, Blk. C, T. S. Jones, Gibson Oil Corp. 1.
Clay County School Land, Hamilton Tract 2, Charles Page et al 1.
Sec. 31, Blk. M-2, A. W. Gill, Murphy et al 1.*
Sec. 29, Blk. B-1, J. A. Meade, Pettijohn et al 1.*
School Land, A. H. Tandy, Trammel et al 1.*

SHERMAN COUNTY
Rigs
Sec. 35, Blk. 2, Lee Bivins, Eclipse Drilling Co. 1.
Wells Drilling
Sec. 35, Blk. 3-B, Bivins, Get Oil Co. 1.*
Sec. 161, Blk. 1-C, Roach, Phillips Peroleum Co. & Savoy 1.
Rigs, 11; wells drilling, 29; wells shut down, 18; total, 58.

SOUTHWEST TEXAS

Summary of Operations

Field—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Luling	1	75	0	0	1	2	3
Mirando	52	10,052	4	11	17	48	65
Somerset	2	15	0	0	0	2	2
Rockdale-Minerva	5	54	0	0	3	9	12
Miscellaneous	3	0	3	0	15	32	47
Total Sept.	63	10,196	7	11	36	93	129
Total Aug.	81	12,577	11	5	41	104	146
Difference	18	2,381	4	6	5	11	16

GULF COAST FIELDS

Summary of Operations

District—	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Boling	2	1,200	0	1	3	4
Batson	4	140	2	2	5	7
Blue Ridge	1	350	0	2	4	6
Barber Hill	2	600	0	0	3	3
Big Creek	1	1,600	0	0	2	2
Edgerly (La.)	1	100	0	1	2	3
Goose Creek	9	380	4	3	8	11
Humble	2	310	2	2	6	8
Hull	8	5,410	0	3	16	19
High Island	2	50	1	0	3	3
Jennings (La.)	6	460	3	1	5	6
Lockport (La.)	2	5,500	0	2	7	9
Nash Dome	0	0	0	1	4	5
Orange	8	3,425	3	1	5	6
Orchard Dome	0	0	0	0	1	1
Pierce Junction	4	2,475	0	1	9	10
Spindletop	36	76,120	7	13	33	46
Saratoga	1	0	1	0	1	1
Sour Lake	10	9,606	1	7	9	16
Vinton (La.)	4	200	3	2	7	9
West Columbia	0	0	0	1	2	3
Miscellaneous	3	0	8	12	49	61
Total Sept.	111	108,926	35	55	184	239
Total August	105	93,475	28	73	199	272
Difference	6	15,451	7	18	15	33

WELLS COMPLETED
BOLING
Keller, Gaye & Weed 2 300
Hawes, Humble Oil & Ref. 5 300
Wells completed 2
Production 1200

BATSON
Choate, Gulf Prod. 63 75
LaJarza, The Texas Company 2 ..... dry
Milhome, S. R. Buchanan 90 ..... dry
Texas, Ada Belle Oil 109 65
Wells completed 4
Production 140
Dry 2

BLUE RIDGE
Blakely, Gulf Prod. 10 350
Wells completed 1
Production 350

BARBER HILL
Kirby, Bennett & Humphrey Corp. 3 500
Barber, Barclay & Meadors 3 100
Wells completed 2
Production 600

BIG CREEK
Davis, Gulf Prod. 21 1600
Wells completed 1
Production 1600

EDGERLY
Lilliard, C. M. Crotty 14 100
Wells completed 1
Production 100

GOOSE CREEK
Smith, Humble Oil & Ref. 68 ..... dry
Beaumont, Gulf Prod. 34 50
Chapman-Bryan, Gulf Prod. 12 140
Freeman, Southern Exploration 1 ..... sw
Beaumont, Gulf Prod. 33 150
Wright, Gulf Prod. 7 ..... abd
Smith, Humble Oil & Ref. 60 ..... sw
Galliard, Gulf Coast Oil 9 10
Peninsula, Humble Oil & Ref. 12 30
Wells completed 9
Production 380
Abandoned and salt water 4

HUMBLE
River, The Sun Co. 33 300
Harrell, Czereaux & Martin 2 10
Wells completed 2
Production 310

HULL
Beavers, Humble Oil & Ref. 1 2700
Dolbear, Republic-Houston Oil 135 50
Dolbear, Republic-Houston Oil 137 150
Dolbear, Republic-Houston Oil 138 200
Harrison, Hull Oil 4 600
Barngrover, Empire Gas & Fuel, 20 1100
Hannah, The Texas Company 1 350
Phoenix, Gulf Prod. 72 250
Wells completed 8
Production 5410

JENNINGS
Martin, R. N. Hines 3 ..... abd
S. F. S., Bolyard Oil 3 250
Arndault, Gulf Ref. 38 200
Eve, Coastal Fuel Oil 32 ..... abd
Fontent, General Pet. 6 ..... abd
Latrielle, The Texas Company 102 10
Wells completed 6
Production 460
Abandoned 3

HIGH ISLAND
Smith, Gulf Prod. 5 50
Lockhart, Sun Co. 9 ..... abd
Wells completed 2
Production 50
Abandoned 1

LOCKPORT
Bordages, Vacuum-Gulf No. 3 4000
Miller, Vacuum-Gulf No. 8 (sanded) 2500
Wells completed 2
Production 6500

PIERCE JUNCTION
Settegast, Rio Bravo Oil 3 375
Cain, Navarro Oil 3 200
D. F. Settegast, Rio Bravo Oil 3 900
Bender, Bashara Co. 2 1000
Wells completed 4
Production 2475

ORANGE
Moore, Atlantic Oil Prod. 3 (wo) 75
McLean, Brownie Babbittee Oil 3 2200
Carbello, Rex Pet. 2-B 250
Brown, Sun Co. 2 200
Chesson, Texhoma Oil 16 ..... sw
Chesson, Humble Oil & Ref. 27-B 700
State land, Ryeade Pet. 1-C ..... sw
McGuire, Gulf Prod. 1 ..... sw
Wells completed 8
Production 3425
Salt water 3

SPINDLETOP
Roche, Gulf Prod. 3 9600
Mann, Gulf Prod. 4 3500
Weed, Gulf Prod. (dpnd) 3000
Oakwood, Gulf Prod. 4 ..... abd
Weed, Gulf Prod. 5 50
Weed, Gulf Prod. 4 4000
Weed, Gulf Prod. 1 (dpnd) 2500
Jack-Duff, Gulf Prod. 2 1000
Oakwood, Gulf Prod. 3 2500
T & N O, Rio Bravo Oil 4 4000
T & N O, Rio Bravo Oil 7 ..... gas blowout
T & N O, Rio Bravo Oil 6 60
McLean, Atlantic Oil Prod. 3 2500
McLean, Atlantic Oil Prod. 6 4500
McLean, Atlantic Oil Prod. 5 2500
McLean, Atlantic Oil Prod. 7 4000
T & N O, Rio Bravo Oil 6 60
Gladys, Yount Lee Oil 6 3000
Gladys, Yount Lee Oil 8 4500
Davis, Yount Lee Oil 3 (dpnd) 4000
McFaddin, Yount Lee Oil 12 4500
McFaddin, Yount Lee Oil 9 4200
McFaddin, Yount Lee Oil 10 5000
Fee, Yount Lee Oil 4 4500
Fee, Yount Lee Oil 6 ..... gas blowout
McFaddin, Unity Oil 89 1000
Banks, W. C. Turmbow 1 1000
Davis, Lord & Mothner 1 ..... abd
Davis, L. & O. 1 ..... abd
Weed, Wilson & Broach 1 ..... abd
Trembly, Porch and others 1 ..... abd
Gordon, Paggi & Co. 2 300
Ewing, Combest and others 1 ..... sw
Trembly, Seven Oil 1 ..... abd
Howell, Deep Sand Oil 2 200
McFaddin, Ward & Wise 1 150
Wells completed 36
Production 76120
Abandoned and salt water 7
Gas blowouts 2

SARATOGA
Jordittt, Rio Bravo Oil 11 ..... sw
Completed and salt water 1

SOUR LAKE
Schaffers, Gordon and others 1 1500
Fee, Eunice and others 1 1500
Lynn, Yount Lee Oil 2 650
Merchant, Orange Pet. 1 (dpnd) 950
Fee, Minor Oil 78 6
Bashara, Humphrey Corp. 2-B 1000
McLean, Gulf Prod. 1-D 200
Bashara, Humphrey Corp. 3-B 800
Bashara, Bashara Oil 1 3000
Libbie, Sun Co. 1 ..... abd
Wells completed 1
Production 9600
Abandoned 1

VINTON
Vincent, Edgerly Pet. 11 ..... abd
Johnson, Vinton Synd. 12 ..... abd
Vincent, Vinton Pet. 17 ..... abd
Gray, Gulf Ref. 56 200
Wells completed 4
Production 200
Abandoned 3

MISCELLANEOUS
Matagorda County—
Robins, H. & R. Co. 1 ..... abd
Craig, Gulf Prod. 6 ..... abd
Austin County—
Thompson, Valley Oil 1 ..... abd
Hardin County—
Hardin, Texas Little Farms Assn. 1 ..... abd
Harris County—
Elena, Bancroft and others 1 ..... abd
Brazoria County—
Allen, Roxana Pet. 2 ..... abd
Jefferson County
Big Hill, Sun-Dyson, Houston Oil 2 ..... abd
West, West Port Arthur Dev. 3 ..... abd
Wells completed 8
Abandoned 3

BOLING
Rigs
Keller, Weed and Gayle, 2.
Wells Drilling
Felder, The Texas Company 3.
Farmer, The Texas Company 1.
Farmer, The Sun Co. 1.
Rigs, 1; wells drilling, 3; total, 4.

BATSON
Rigs
Fee, Ada Belle Oil, 110.
Haywood, Paraffine Oil 67.
Wells Drilling
Milhome, S. R. Buchanan 91.
Counselman, East Batson Oil 9.
Paraffine, Paraffine Oil 67.
Cruse, Gulf Prod. 1.
Choate, Gulf Prod. 64.
Rigs, 2; wells drilling, 5; total, 7.

BLUE RIDGE
Rigs
Robinson, Navarro Oil 1.
Booth, Texhoma Oil 2 (wo).
Wells Drilling
West-Schenck, Humphrey Corporation 1.
Davidson, Sinclair Oil & Gas 2.
West-Schenck, Gulf Prod 6.
Luscher, Gulf Prod. 9.
Rigs, 2; wells drilling, 4; total, 6.

BARBER HILL
Wells Drilling
Kirby, Bennett & Humphrey Corp. 3.
Barber, Bennett & Humphrey Corp. 2.
Barber, Barclay & Meadows 2.
Wells drilling, 3.

BIG CREEK
Wells Drilling
Davis, Gulf Production 32, 33.
Wells drilling, 2.

EDGERLY
Rigs
Landry, Edwards Oil 4.
Wells Drilling
Hunter, Rex Pet. 3.
Lilliard, C. M. Crotty 14.
Rigs, 1; wells drilling, 2; total, 3.

GOOSE CREEK
Rigs
Peninsula, Humble Oil & Ref 9, 17.
Myers, Humble Oil & Refg 4.
Wells Drilling
Smith, Humble Oil & Refg 26, 68.
Peninsula, Humble Oil & Refg 10, 31.
Hirsch, Gulf Prod. 6.
State land, Gulf Prod. 10.
Schilling, Keen & Woolf 9.
Galliard, Gulf Coast Oil 14.
Rigs, 3; wells drilling, 8; total, 11.

HUMBLE
Rigs
Butler, W. F. Martin 11.
Cortes, Geo Harris 1.
Wells Drilling
Hirsch, Benedum & Trees 1.
Bissonnett, John Deering 3.
River, Sun 33, 34.
Long, Czereaux & Martin 9.
Strange, Mairsalles Bros. 7.
Rigs, 2; wells drilling, 6; total, 8.

HULL
Rigs
Lynd, Humble Oil & Refg 2.
Merchant, Humble Oil & Refg 5.
Barngrover, Empire Gas & Fuel 22.
Wells Drilling
Dolbear, Republic—Houston Oil 136, 138, 139.
Lynd, Humble Oil & Refg 1.
Hannah, Gulf Prod. 18, 19.
Phoenix, Gulf Prod. 5, 62, 73, 74.
Taylor, Houston Prod. 10.
Aremlin, The Texas Company 1.
Hannah, Texas-Vacuum Oil 6.
Searle, Mecom Oil 1.
Abel, Hull Oil 11.
Barngrover, Empire Gas & Fuel 21.
Rigs, 3; wells drilling, 16; total, 19.

HIGH ISLAND
Wells Drilling
Cade, The Sun Co. 8, 11.
Lockhart, Sun Co. 10.
Wells drilling, 3.

JENNINGS
Rigs
Pierce, Jennings Oil & Gas 2.
Wells Drilling
Pierce, Jennings Oil & Gas 1.
Bayne, The Texas Company 1.
Noble, Utopal Oil 1.
Fontenot, General Pet. 6.
Chicago-Jennings, F. I. Getty 11.
Rigs, 1; wells drilling, 5; total, 6.

LOCKPORT
Rigs
Miller, Vacumm-Gulf 12.
Bordages, Vacuum-Gulf 4.
Wells Drilling
Miller, Vacuum-Gulf 8 wo; 10.
Farquhar, Vacuum-Gulf 4.
Friedberg & Wolf 3.
Bayou D'Inde, Vacuum-Gulf 1, 2.
Lock-Moore, Vacuum-Gulf 4.
Rigs, 2; wells drilling, 7; total, 9.

NASH DOME
Rigs
Wisdom, Rycade Pet. 9.
Wells Drilling
Wisdom, Rycade Pet. 8.
Flessner, Rycade Pet. 9.
Nash, Rycade Pet. 8, 9.
Rigs, 1; wells drilling, 4; total, 5.

ORANGE
Rigs
Winifree, Humble Oil & Refg. 10 (wo).
Wells Drilling
Winifree, Humble Oil & Ref. 2.
State land, Rycade Pet. 1-C dpng.
Chesson, Texhoma Oil, 9, 16.
Chesson, Orange Pet. 7.
Rigs, 1; wells drilling, 5; total, 6.

ORCHARD
Wells Drilling
Moore, Gulf Prod. 9.
Total, 1.

PIERCE FUNCTION
Settegast, Rio Bravo Oil 5.
Wells Drilling
Jones, Gulf Prod. 1. 1-A.
Taylor, Gulf Prod. 19.
Bender, J. F. Bashara, 1.
P. F. Settegast, Rio Bravo Oil 4.
Prudential, Marland Oil 1.
Dooley, Texas Exploration 10.
Howe, H. R. Cullen 6 sd.
Navarro-Navarro Oil, Humble 1.
Rigs, 1; wells drilling, 9; total, 10.

SPINDLETOP
Rigs
McLean, Atlantic Oil Prod. 11.
Pierce, Seiss and others 1.
T. & N. O., Rio Bravo Oil 8, 9.
McLean, Sun Co. 5.
Banks, Turnbow Oil 2.
Quinn, Walker Oil 2.
Gladys, Kinnear Oil 1.
Oakwood, Gulf Prod. 6.
Mann, Gulf Prod. 5.
Jack-Duff, Gulf Prod. 5.
Weed, Gulf Prod. 6, 8.
Wells Drilling
McLean, Atlantic Oil Prod. 7, 8, 9, 10.
Garrick, New Beaumont Oil 1 dpng.
Ewing, Ross Combat 1 sd.
Howell, Deep Sand Oil 1, 3.
Gladys, W. B. Flynn 1.
Ewing, Hines and others 1.
McLean, Grayburg Oil 1.
Gordon, Paggi & Co. 3.
T. & N. O., Rio Bravo Oil 7, 51, 52.
Hammond, Rush & Pittman 1.
McLean, Sun Co. 3, 4, 6, 7.
Price, Sun Co. 1.
Weed, Favorite Oil 1 sd.
McFaddin, Unity Oil 90.
Quinn, Walker Oil 1.
Fee, Magnolia Pet. 1.
Oakwood, Gulf Prod. 5.
Jack-Duff, Gulf Prod. 4, 6.
Weed, Gulf Prod. 7.
Roche, Gulf Prod. 2 dpng, 4 sd; 5, 3.
Rigs, 13; wells drilling, 23; total, 46.

SARATOGA
Wells Drilling
Queen, Paggi & Co. 43 sd.
Total, 1.

SOUR LAKE
Rigs
Fee, The Texas Company 104.
Bashara, Humphrey Corp. 5, 6.
Giesecke, Orange Pet. 2.
Cora Jackson, Gulf Prod. 3, 4.
Wells Drilling
Fee, J. F. Bashara 1, 2.
Bashara, Humphrey Corp. 2, 3, 4.
Oxford-Kelly, Humphrey Corp. 2.
Cora Jackson, Gulf Prod. 1, 2.
Hardin, Lake View Oil 50.
Hardin, Humble Oil & Ref. 34.
Rigs, 7; wells drilling, 9; total, 16.

SOUTH LIBERTY
Rigs
Tadlock, Associated Oil 1.
Wells Drilling
Welder, Humble Oil & Ref. 3, 4.
Beckman, Gulf Prod. 1.
Mitchell, Premium Oil 1.
Rigs, 1; wells drilling, 4; total, 5.

VINTON
Rigs
Gray, Marrs McLean 1.
Star, Gulf Ref. 42.
Wells Drilling
Star, Gulf Ref. 40, 41.
Vincent, Texas Company 17.
Gray, The Texas Company 2-C.
Perry, Ratcliffe and others 1.
Vincent, Edgerly Pet. 10, 11.
Rigs, 2; wells drilling, 7; total, 9.

West Columbia
Rigs
Abrams, The Texas Company 12.
Wells Drilling
Hogg, The Texas Company 82.
Hyde, Hyde Prod. 2.
Rigs, 1; wells drilling, 2; total, 3.

MISCELLANEOUS
Brazos County—
Wells Drilling
Vicks, J. A. Germany 1.
Brazoria County—
Clemens dome, Bernard river, Roxana Pet. 1.
Allen dome, Bernard river, Roxana Pet. 1.
Wells Drilling
Clemens, Roxana Pet. 2.
Pabst, Roxana Pet. 1.
Allen, Roxana Pet. 3.
Stratton Ridge, Gulf Prod. 1 sd.
Stratton Ridge, Ridge Oil & Gas 5 sd.
Chambers County—
Wells Drilling
Moss Bluff, Roxana Pet. 1.
South of Moss Bluff, Osage Oil 1.
Fort Bend County—
Wells Drilling
Davis, Gulf Prod. 15, 16, 17.
Harris County—
Rigs
Spring, Brain et al 1.
Wells Drilling
Lipper, Kelly and others 1.
Cage, Gynn and others 1.
Hardin County—
Rigs
Hardin, Texas Little Farms Assn 2.
Jefferson County—
Wells Drilling
Fannette Dome, Bordages, Gulf Prod. 2.
Fannette dome, Thomas, Gulf Prod. 9.
West, Port Arthur Dev. 4.
Liberty County—
Wells Drilling
Grogan Lumber, George Leland 2 sd.
Matagorda County—
Rigs
Hawkins dome, Sanborn, Gulf Prod. 2.
Wells Drilling
Hawkins, Parkinson, Gulf Prod. 1.
Wharton County—
Wells Drilling
Malone, J. W. Rich & Humphrey Corp. 1.
Waller County—
Rigs
Maxwell, Rem Oil 2.
Angelina County—
Wells Drilling
Henderson, Humble Oil & Ref. 1.
Montooth, Flanigan Drg. Co. 1.
Koutz, Van Hatcher and others 1.
Grimes County—
Wells Drilling
Dodds, Moraco Oil 1.
Polk County—
Wells Drilling
Post Oak, Post Oak Oil 1.
Sabine County—
Rigs
Bell, The Texas Company 1.
Wells Drilling
Temple Lumber, Humble Oil & Ref. 1.
Montgomery County—
Wells Drilling
North of San Jacinto River, unknown parties 1 (formation test).
Goliad County—
Wells Drilling
Pettus, Houston Oil 4.
Park, Houston Oil 1.
Jackson County—
Rigs
Feist, Wright Bros. 1.
Wells Drilling
Near Inez, Houston Oil 1.
Drushell, Houston Oil 4.
Calassum, Wright Bros. 1.
Fenner, Norton and others 1.
Orange County—
Rigs
Stark, E. W. Ogden 1.
Washington County—
Rigs
Lehmann, C. A. DeWare 1.
Pompyski, Ross Oil 1.
Wells Drilling
———, Pratt & Hewitt 1.
Krenner, J. H. Kronlin 1.

SOUTH LOUISIANA
IBERIA PARISH
Wells Drilling
Salt Mine, United Oil & Gas 2.

WEST FELICIANA PARISH
Wells Drilling
Prison land, Vacuum Oil 1.

CALCASIEU PARISH
Rigs
Beckenstein, F. F. Hintze 1.
Wells Drilling
Stark dome, Moore, Gulf Ref. 4.
Harlan, H. C. Hanzsen 1.
La Franc, Union Sulphur Co. 1.

CAMERON PARISH
Wells Drilling
Sweet Lake, Pure Oil 3.
Johnson Bayou, Sun & Humble Cos 1.

ST. MARTIN PARISH
Wells Drilling
Herbert, Sabine Oil 1.
Moresi, Lawrence & Schmidt 1.
Burke, Ohio Oil 1.

ST. MARY PARISH
Wells Drilling
Avoca Island, Pure Oil—Humphrey Corp. 1, 2.

JEFF DAVIS PARISH
Wells Drilling
Hardy, Gulf Ref. & Emerson & Noble 1.
———, H. C. Hanzen 1.
Near Morgan City, Patterson, Gulf Ref. Co. 1.
Rigs, 12; wells drilling, 49; total, 61.

EAST CENTRAL TEXAS

Summary of September Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Limestone	28	18.927	5	0	12	32	44
Navarro	1	1,200	0	0	0	8	8
Milam	1	0	1	0	0	0	0
Hill	2	0	2	0	0	0	0
Miscellaneous.	0	0	0	0	1	15	16
Total Sept...	32	20.127	8	0	13	55	68
Total Aug...	25	22,093	11	0	15	54	69
Difference..	7	1,966	3	0	2	1	1

WELLS COMPLETED
LIMESTONE COUNTY

Atkins, Moss & Keeling	dry
Rosson, Moss & Keeling 2	400
Cogsdell, Transcontinental Oil Co. 4	2800
Atkins, Pure Oil 2	315
S. M. & K. Odell, The Texas Company	dry
Mrs. Atkins, Transcontinental Oil Co. 3	475
Mrs. Atkins, Transcontinental Oil Co. 4	150
Cogsdell 25 acres, Transcontinental Oil Co. 2	860
A. E. Rosson, Transcontinental Oil Co. 4	610
A. E. Rosson, Transcontinental Oil Co. 7	1224
Negro Church Lot, Bass et al 1	dry
Erskine, Godley Oil Co.	abd
Rosson, Godley Oil 2	1700
Rosson, Godley Oil 3	375
Rosson, J. K. D. Shaffer et al	1400
Rosson, Simms Oil 1	500
Rosson, E. L. Smith Oil Co.	2500
Medlock, Transcontinental Oil Co. 1	950
Rosson, Transcontinental Oil 5	300
Rosson, Transcontinental Oil 9	275
Rosson, Transcontinental Oil 8-A	500
Rosson, Barkley & Meadows 1	364
Rosson, Godley Oil et al 1-A	2494
Erskine Transcontinental Oil 1	400
Rosson, Transcontinental Oil 6	800
Rosson, Transcontinental Oil 1-A	698
Richardson, Transcontinental Oil Co. 1	abd
Wells completed	28
Production	18,927
Dry	5

NAVARRO COUNTY

Rose, Simms Oil et al 1	1200

MILAM COUNTY

Brown, Allen & Harper 1	dry

HILL COUNTY

Rose, Johnson & Phelps 1	dry
Sanderson, Johnson & Phelps 1	dry

Rigs and Wells Drilling
LIMESTONE COUNTY
Rigs
Montgomery, Killam et al 1.
Rosson, Moss & Keeling 3, 4.
Cogsdell, Transcontinental Oil 5.
Rosson, Transcontinental Oil 11, 12, 13, 14.
Hargrove, Eisenmayer 1.
Rosson, Barkley & Meadows 2.
Rosson, Atlantic O. P. Co. 3.
Rosson, Transcontinental Oil 14-A.
Wells Drilling
Peoples, Penn & Navarro Oil 1.
Atkins, Pure Oil 3.
Cogsdell, Transcontinental Oil 6, 7, 8.
Cochran, Transcontinental Oil 2, 3.
A. E. Rosson, Transcontinental Oil 8.
Bass & Sweatt, Evangeline Oil 1.
Rosson, Atlantic O. P. Co. 2 (sand).
Rosson, Godley Oil et al 2-A, 3-A.
Erskine, Reiter-Foster Oil 2.
Rosson, Simms Oil 1-A.
Rosson, The Texas Company 1.
W. R. & L. Erskine, Transcontinental Oil 2, 3.
Medlock, Transcontinental Oil 2, 3.
Ross, Transcontinental Oil 2.
Rosson, Transcontinental Oil 10, 3-A, 7-A, 9-A, 10-A, 11-A, 12-A, 13-A.
Oliver, Shaffer et al 1.
Ganter, Humble O. & R. 1.
Bassett, Pandem Oil 1.
Fenner, Dioden & Hammond 1.
Rigs, 12; wells drilling, 32; total, 44.

NAVARRO COUNTY
Wells Drilling
Mitchell, Osborne et al 1.
Fallwood, Farris et al 1.
Woollens, Garland Kent 2.
Woollens, G. Kent 2.
Pearce, McNeill et al 1.
Swink, Sun Oil Co. 3.
McClelland, McDonald Bros. 2.
Longbotham, McSweeney & Snowden 13.
Rigs, 0; wells drilling, 8; total, 8.

MISCELLANEOUS
Rigs
Kaufmann County—
Hynic Bros., Atlantic O. P. & Hill 1.
Wells Drilling
Anderson County—
Greenwood, Navarro Oil Co. 5.
School Land, Humble O. & R. 1-A.
Jackson, M. A. Davey 1.
Cherokee County—
Templeton, Humble O. & R. Co. 1.
Hill, Nicholle & Wife 1.
Belling, Humphreys Corp. 1.
Summers, Magnolia Pet. 1.
Ellis County—
Getzendammer, Magnolia Pet 1.
Falls County—
Kyser, Ferbs et al 1.
Peacock, High Bank Oil 1.
Freestone County—
Pickens, Kechi Pet. 1.
Henderson County—
Sterrett, Ferdinand, Heins 1.
Martin, Evans et al 1.
Hopkins County—
Brooks, Kelsey et al 1.
Hunt County—
Bennett, Tullall & Kelsey 1.
Rigs, 1; wells drilling, 0; total, 1.

LOUISIANA-ARKANSAS

ARKANSAS

Summary of Completions and Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Tt'l.
Union	50	1,406	9	2	19	55	74
Ouachita	12	842	2	1	6	14	20
Columbia	4	31	1	0	3	0	3
Nevada	4	290	1	0	3	5	8
Bradley	0	0	0	0	0	4	4
Miscellaneous..	3	0	3	0	0	9	9
Total Sept...	73	2,569	16	3	31	87	118
Total Aug. ..	104	4,843	23	7	31	93	124
Difference ..	31	2,274	7	4	0	6	6

LOUISIANA

Summary of Completions and Operations

Parish—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Bossier	4	10	3	0	2	3	4
Caddo	20	1,427	5	1	13	39	52
Caldwell	3	0	3	0	1	2	3
Claiborne	1	0	1	0	0	2	2
DeSoto	4	0	1	3	2	3	5
Grant	6	50	5	0	6	3	9
Jackson	1	0	1	0	2	3	5
La Salle	32	2,595	9	0	10	23	33
Monroe district	7	0	2	5	6	13	19
Natchitoches	3	0	2	0	0	9	9
Rapides	0	0	0	0	0	2	2
Red River	0	0	0	0	0	1	1
Richland	0	0	0	0	0	3	3
Sabine	0	0	0	0	3	2	5
Webster	5	135	3	1	0	8	9
Winn	3	360	1	0	3	6	9
Miscellaneous..	4	0	4	0	1	2	3
Total Sept...	92	4,577	40	10	49	123	172
Total Aug...	110	5,778	38	15	36	126	162
Difference ..	18	1,201	2	5	13	3	10

BOSSIER PARISH

15-19-11	Bliss and Wetherbee, Gulf Refining Co. A-21	10
15-19-11	Fee, George W. Wetherbee A-13	dry
9-20-13	Bulkley, Benton Syndicate 1	dry
4-21-11	Antrin, Woodley and Collins 1	dry
		10

CADDO PARISH

15-20-16	Ferry Lake, Gulf Refining Co. 251	75
16-20-16	Caddo Levee Board, Gulf Refining Co. U-7	85
4-21-16	Harrell, Texas Company 54	20
23-21-15	Robertshaw, Magnolia Petroleum Co. 16	gas
15-20-16	Ferry Lake, Gulf Refining Co. 248	15
34-21-16	State, W. D. Chew 5	40
15-20-16	Ferry Lake, Gulf Refining Co. 247	80
35-21-15	Muslow, Gulf Refining Co. E-1	dry
7-20-15	Muslow, Dixie Oil Co. 17	10
15-21-15	Spell, Double I. I. Oil Co. 18	15
29-21-16	Ferry Lake, Gulf Refining Co. 250	dry
1-20-16	Palo Oil Co., Morris Drilling Co. 1	10
32-21-15	Muslow, Ramsey et al 1	dry
29-21-15	Hobbs, Page and Caldwell 1	dry
23-21-15	Bashara, Tholl Oil Co. 11	15
15-20-15	Thomas, Victor Wenzell 1	1000
14-21-15	Robertshaw, Dixie Oil Co. 79	20
16-20-16	Ferry Lake, Gulf Refining Co. 249	42
18-20-16	Levee Board, Gulf Refining Co. U-8	abn
33-21-16	Caddo Levee Board, Texas Company 64	50
24-21-16	Carpen Fee, Unity Petroleum Co. 2	dry
		1427

CALDWELL PARISH

38-13-4e	Merideth, Keisker and Simon 1	dry
6-11-4e	Cruse, Grant and Pipes 1	dry
13-13-5e	Caldwell, Southern Crude Oil Purchasing Co. 3	dry

CLAIBORNE PARISH

35-19-8	Crichton, Gulf Refining Co. 1	dry

DE SOTO PARISH

23-13-13	Woolums, Peer Oil Corp. 1	dry
36-12-11	Chaffraix, J. C. Walton 1	gas
15-12-14	L. L. & D. Co., J. P. Evans 1	gas
20-12-14	Sutherlin, J. P. Evans 1	gas

GRANT PARISH

17-9-1e	Holmes, Holmes et al 1	dry
16-9-1e	Holmes, Bradley and Cozart 1	dry
16-9-1e	Swope, Texas Company 1	50
30-9-2w	Edenborn, Humble Oil and Refining Co. A-1	dry
23-9-1w	L. & A., Humble Oil and Refining Co. A-13	dry
13-9-2w	L. & A., Humble Oil and Refining Co. A-10	dry

JACKSON PARISH

20-16-3w	Davis Theus, Louisiana Petroleum Co. 1	dry

LA SALLE PARISH

13-10-2e	Louisiana Central, Vacuum Oil Co. 1	dry
15-9-3e	L. & A., Tunica Petroleum Co. 4	dry
25-9-1e	L. & A., Tunica Petroleum Co. A-12	dry
26-10-1e	Pendarvis, Shreveport Oil Corp. 1	50
19-10-2e	Urania, Natural Gas and Fuel Corp. M-4	20
7-10-2e	Urania, Beckman and Freeman B-7	75
30-10-2e	Tremont, Rochelle Oil and Gas Co. 1	100
11-9-1e	Zenoria, Montague Oil Co. 3.	60
25-11-3e	Louisiana Central, Humble Oil and Refining Co. 3	dry
20-10-2e	Urania, Natural Gas and Fuel Corp. M-3	60
26-10-1e	Tullos, Natural Gas and Fuel Corp. 3	25
26-10-1e	Russell, Natural Gas and Fuel Corp. A-3	20
26-10-1e	Ratcliff, Little River Oil Co. 1	15
35-10-1e	Tremont, Louisiana Oil Refining Corp. A-10	15
30-10-2e	Tremont, Louisiana Oil Refining Corp. B-21	25
2-9-1e	Griswold, H. L. Hunt 2	80
7-10-2e	Urania, Beckman and Freeman B-6	100
2-9-1e	Tremont, Louisiana Oil Refining Corp. C-3	250
2-10-2e	Urania, Yeary and Bristol 4	50
2-9-1e	Urania, George W. Wetherbee 3	200
19-10-2e	Urania, Taylor, trustee 4	dry
7-10-2e	Urania, Beckman and Freeman B-8	dry
7-10-2e	Urania, Beckman and Freeman B-5	50
26-10-1e	Russell, Natural Gas and Fuel Corp. A-4	100
2-9-1e	Tremont, Louisiana Oil Refining Corp.	abn
2-9-1e	Griswould, H. L. Hunt 3	100
6-10-2e	Urania, N. C. Hudson 1	dry
23-10-1e	Tullos, O. W. Clark 5	50
22-9-2e	L. & A., Tunica Petroleum Co. 6	dry
26-9-3e	L. & A., Tunica Petroleum Co. A-11	dry
7-10-2e	Winnberry, Hunt, McCurry and Zoder 3	1000
26-10-1e	Tullos, Natural Gas and Fuel Corp. 4	100
18-10-2e	Urania, C. S. Thomas 1	50
		2595

MONROE DISTRICT

43-19-4e	Cole, Palmer Corp. 3	gas
22-20-4e	Archer, Feazel trustee 1	gas
2-21-4e	Tensas Delta, Natural Gas Products Co. 7	gas
35-9-4e	Ray and Green, R. J. O'Brien 2	gas
20-20-4e	Mayfield, Ruston Drilling Co. 1	gas
14-20-1e	James Reeves, Arkansas Fuel Oil Co. 1	dry
22-22-2w	Pickens, R. W. Rhodes 1	dry
		59,000,000

NATCHITOCHESS PARISH

31-8-5	Williams, R. E. Davison et al 1	dry
6-5-7w	L. L. L. L. Co., J. R. Greer 1.	dry

WEBSTER PARISH

13-21-10	Bodacu, Humble Oil and Refining Co. B-5	dry
28-21-10	Nelson, Louisiana Oil Refining Corp. 3	abn
30-23-9	Peckett, Belchic and Laskey 1	gas
23-21-10	Cox, Ohio Oil Co. 1	dry
20-20-8	Crichton, Palmer Corp. 1	dry
21-21-10	Tiner, Magnolia Petroleum Co. 3	135
		135

WINN PARISH

23-10-1e	Allen, Allen and associates 1	300
26-10-1e	Harper, O. W. Clark 7	60
26-9-3w	Edenborn, Humble Oil and Refining Co. 1-A	dry
		360

MISCELLANEOUS

20-14-12	Sommerset, Spencer and Rhodes 1	dry
24-19-12e	Abston, Crump and Wynn Co., T. A. Snell 1	dry
22-17-6e	Hicks, Louisiana Petroleum Co. 1	dry
3-18-3w	Lincoln Land Co., Arkansas Fuel Oil Co. 1	dry

ARKANSAS
UNION COUNTY

11-17-16	Haney, McGaha et al 1	dry
21-17-16	Parker, Imperial Oil and Gas Co. 1	35
21-17-16	Primm, Imperial Oil and Gas Co. 4	30
22-17-16	Mooty, Reynolds and Marr 2	15
20-17-16	Halsey, Magnolia Petroleum Co. 3	10
16-17-16	Graham, Revenger Oil Corp. 4	15

17-17-16 Mitchell, Lion Oil and Refining Co. A-13 ..... dry
27-16-16 Swilley, H. L. Hunt 5..... abn
27-16-16 Hammond, H. L. Hunt 1.... 40
9-16-15 Murphy, Keen & Woolf 5.. 12
31-15-15 Laney, Simms Oil Co. 10.... 50
3-17-16 Slaughter, Wingfield et al B-4 12
9-17-16 Dumas, Rovenger Oil Corp. 8. 20
17-17-16 Mitchell, Lion Oil and Refining Co. A-10..... 15
17-17-16 Mitchell, Lion Oil and Refining Co. A-1 10
4-17-16 Murphy, H. L. Hunt 8..... 40
20-17-16 Patterson, Gulf Refining Co. 1 15
21-17-16 Parker, Gulf Refining Co. 3 25
17-16-15 Cook, Peer Oil Corp. 7..... 10
6-16-16 Werner, Gulf Refining Co. 47 10
16-16-15 Cook, J. E. Crosbie 2..... dry
15-16-15 Murphy, Eason et al 9..... dry
8-18-15 Brown, Sun Oil Co. 9..... dry
10-16-15 Pate, Ohio Oil Co. 11..... gas
10-16-15 Lawton, Mazda Oil Corp. R-6 dry
10-16-15 Lawton, Mazda Oil Corp. R-4 dry
17-16-15 Le Croy, Bailey and Trimble 2 ..... dry
5-16-15 Hardy-Murphy, Gulf Refining Co. 39 149
3-16-15 Hardy-Murphy, Gulf Refining Co. 49 195
20-17-16 Halsey, Magnolia Petroleum Co. 2 40
22-17-16 Mooty, Eason et al 3..... 10
21-17-16 Parker, Gulf Refining Co. 4. 25
21-17-16 Primm, Gulf Refining Co. 4 . 25
17-17-16 Mitchell, Lion Oil and Refining Co. A-16 ..... gas
8-17-16 Slaughter, Magnolia Petroleum Co. 2 20
15-17-16 Milner, J. L. Meek 1..... 6
21-17-16 Stocks, Ohio Oil Co. 2..... 20
3-17-16 Tooker, Southern Crude Oil Purchasing Co. 1..... 8
11-16-15 Giller, Hollayfield and McFarland 10 15
17-16-15 Tatum, Magnolia Production Co. 6 75
3-18-15 Prothro, Grimes and Jones 1 dry
12-16-17 Scott, Magnolia Petroleum Co. 2 10
34-16-16 Matthews, Simms Oil Co. 1 25
4-16-15 Hardy-Murphy, Gulf Refining Co. 41 240
17-17-16 Slaughter, Magnolia Petroleum Co. 2 2
3-17-16 Ford, Atlantic Oil Producing Co. 4 35
20-17-16 Halsey, Magnolia Petroleum Co. 4 25
21-17-16 Stocks, Ohio Oil Co. 1..... 20
16-17-16 Goodwin, Rovenger Oil Corp. B-4 40
3-17-16 Willett, Roxana Petroleum Corp. 3 35
3-17-16 Willett, Roxana Petroleum Corp. 4 22
1406

OUACHITA PARISH

15-15-19 Holton, Louisiana Oil Refining Corp. 1.. .. .. gas
29-15-15 Richardson, Woodley Petroleum Co. 5..... 50
22-15-16 Hardin, Sun Oil Co. 2..... 40
33-15-15 Umsted, Gulf Refining Co. A-20 ..... dry
35-15-17 Clawson, A Meek 2..... 60
32-15-15 Bennett, Standard Oil Co. B-8 365
31-15-19 Watson, Magnolia Petroleum Co. 5 5
33-15-15 Umsted, Gulf Refining Co. A-21 75
9-14-17 Tate, Phillips Petroleum Co. 1 ..... dry
28-15-15 Murphy, Standard Oil Co. B-11 150
27-15-16 Neeley, Texas Company 8.... 85
32-15-19 Curry, Ohio Oil Co. 1..... 12
842

COLUMBIA COUNTY

18-19-19 Wingfield, Haynesville Trust Co. 1 ..... dry
1-16-20 Jones, Gorden et al 6..... 6
1-16-20 Jones, Gorden et al 7..... 10
36-15-20 Jones, Gorden et al 8..... 15
31

NEVADA COUNTY

2-14-21 Ellis, Bemis et al 1..... 50
2-14-21 Groves, W. F. Furem et al 1.. dry
2-14-21 Ellis, Humble Oil and Refining Co. A-13 140
2-14-21 Waters, Southern Crude Oil Purchasing Co. 1..... 100
290

MISCELLANEOUS

27-17-16 Dorsey, Gulf Refining Co. 1 dry
35-10-20 Brown, Wheeler Oil Co. 1.. dry
12-9-20 Arnold, E. O. Lovett 2..... dry

BOSSIER PARISH

9-22-11 Bollinger, Doern et al 1.
15-19-11 Fee, George W. Wetherbee A-14.

Rigs

26-20-13 Jacobs, Tubbs et al 1.
22-23-12 Roberson, Wheeler and Collins 1.

CADDO PARISH

Wells Drilling

9-20-16 Caddo Levee Board, W. D. Chew A-1.
27-22-15 Jolly, Dixie Oil Co. 1.
18-20-15 Muslow, Dixie Oil Co. 18.
22-21-15 Slattery, Dixie Oil Co. 10.
17-21-14 Sellington, Gilliam Syndicate 1.
2-19-14 Byrd, Gulf Refining Co.
15-20-16 Ferry Lake, Gulf Refining Co. 252, 256.
22-20-16 Ferry Lake, Gulf Refining Co. 253, 254, 255.
29-20-16 Ferry Lake, Gulf Refining Co. 257.
15-21-15 Veasy, Lewis Oil Corp. 3.
24-21-15 Dillon, Magnolia Petroleum Co. 16, 17.
29-21-15 Spell, Magnolia Petroleum Co. 1.
24-21-15 Bradford, Magnolia Pet. Co. 1.
13-20-15 Youree, Murphy et al 1.
12-21-15 Smith, Ohio Oil Co. 20, 21, 22.
9-17-16 Bryson, Owl Oil Co. 1.
31-21-15 Louisiana Oil Fee, Radio Oil Corp. 3.
26-20-15 Youree, Superior Oil Co. 3, 4, 5.
22-15-12 Caddo Levee Board, Texas Company B-1.
23-21-15 C. M. L. Co., Texas Company 40, 42.
14-20-15 Curtis, Texas Company 1.
3-20-16 Perry, Texas Company 3.
3-20-16 Russell, Texas Company 12.
31-21-15 Muslow Fee, Thomason et al 2.
13-21-15 Crystal Fee, Unity Petroleum Co. 1, 3, 4.
32-21-15 Edson, Van Cleve Syndicate 1.
15-20-15 Hunsicker, Victor Wenzell 2.
14-20-15 Wemple, Victor Wenzell 1.

Rigs

23-22-15 Peak, Bayou State Oil Co. 23.
2-20-16 Dambly, H. P. Burford 1.
31-21-15 Atkins, Golden Flood Oil Co. 2. Co. 1.
18-17-16 Waterman, Magnolia Petroleum
14-20-15 Wemple, Magnolia Petroleum Co. 1.
1-20-16 Pala, Morris Drilling Co. 2.
28-21-15 Murray, Ohio Oil Co. 3.
31-21-15 Allday, Tholl Oil Co. 1.
31-21-15 Muslow, Thomason et al 3.
23-21-16 Crystal, Unity Petroleum Co. 5.
15-20-15 Hunsicker, Victor Wenzell 1, 3.
14-20-15 Wemple, Victor Wenzell 2.

Shut Down

15-17-14 Cunningham, Manie Drilling Co. 1.

CALDWELL PARISH

Wells Drilling

22-12-3e Louisiana Central, Roxana Petroleum Corp. 1.
20-13-6e Caldwell, Southern C. O. P. Co. 4.

Rigs

22-14-4e Shaw, Kirsey and Jones 1.

CLAIBORNE PARISH

Wells Drilling

14-23-8 Taylor, Gilliland Oil Co. and Ramsey D-1.
20-21- 8 King, Shaw and Ruch 1.

Shut Down

28-19-5 Beard, Brown et al 1.
7-19-5 Keen, Triangle Drilling Co. 1.

DE SOTO PARISH

9-12-11 Jenkins, Dixie Oil Co. 1.
27-12-11 Bond, Magnolia Petroleum Co. 1.
27-11-11 Flores, Snapp et al 1.

Rigs

28-11-12 Joyner, Helm and Jarman 1.
2-12-12 Wemple, Texas Company A-11.

Shut Down

27-14-13 Riggs, Graize and Hintze 1.

GRANT PARISH

Wells Drilling

17-9-1e Swope, Gulf Refining Co. 2.
15-9-1e Matthews, H. L. Hunt 1.
11-8-2w L. & A., Tunica Petroleum Co. 8.

Rigs

17-9-1e Ball, E. H. Billeand 1.
17-9-1e Holmes, Holmes et al 2.
20-9-2w L. & A., Humble Oil and Refining Co. A-11.
16-9-1e Rider, Keen & Woolf Oil Co. 1.
8-8-1w L. & A., Tunica Petroleum Co. 10.
25-8-1e L. & A., Tunica Petroleum Co. 13.

Shut Down

4-7-4w Calhoun, J. J. Long, et al 1.

JACKSON PARISH

Wells Drilling

5-15-1e Martin, Charles A. Ferguson 1.
3-14-4w Jones, El Dorado Chief Oil Co. 1.
22-17-4w Adams, Grigsby and Co. 1.

Rigs

12-16-3w Davis Theus, Louisiana Petroleum Corp. 2
13-16-2e Davis L. Co., Raymond et al 1.

Shut Down

34-15-3w Horton, Clarence Houseman 1.

LA SALLE PARISH

Wells Drilling

8-10-2e Urania, Catalina Oil Co. 1.
2-9-1e Urania, Chal Daniels 1.
26-10-1e Smith, Finn and House 2.
7-10-2e Urania, Hartzano Oil Co. 1.
2-9-1e Griswold, H. L. Hunt 4.
3-9-1e Griswold, Keen and Woolf Oil Co. 2.
25-10-1e Tremont, Louisiana Oil Refining Corp. B-35.
11-9-1e Zenoria, Montague Oil Co. 4.
5-10-2e Urania, McGaha et al 1.
26-10-1e Russell, Natural Gas and Fuel Corp. A-5, A-6.
20-10-2e Urania, Natural Gas and Fuel Corp. M-5, M-6.
7-10-2e Urania, Pima Petroleum Co. B-9.
18-10-2e Winnberry, Sterling Co. 2.
19-10-2e Urania, Taylor trustee 5.
17-7-3e L. & A., Tunica Petroleum Co. A-12.
2-9-1e Urania, George W. Wetherbee 5.
2-9-1e Urania, Wetherbee et al B-1 B-2.
36-10-1e King, Wooten et al 1.

Rigs

3-9-1e Urania, Carter and Hurley C-1.
8-10-2e Urania, Catalina Oil Co. 2.
2-9-1e Urania, H. L. Hunt 2.
24-10-1e Russell, Jones and Dobbs 2.
3-9-1e Tremont, Louisiana Oil Refining Corp. C-6.
26-10-1e Tullos, Natural Gas and Fuel Corp. 5.
7-10-2e Urania, Oil Operators Trust 6.
7-10-2e Kenny, H. O. Rodgers 1.
26-10-1e Morrow, Shreveport Oil Corp. 1.
26-10-1e Pendarvis, Shreveport Oil Corp. 2.

Shut Down

33-10-3e Louisiana Central, Cherokee Petroleum Co. 3.
23-10-1e State, L. C. Coppage 1.
23-8-4e White Sulphur, Jena Oil Corp. 1.
23-9-1e Taylor, Henry Jones 2.
25-10-1e Russell, Shuman et al 4.

MONROE DISTRICT

Wells Drilling

33-22-4e Texsas Delta, Natural Gas Products Co. 8.
34-21-3e Cooperage, Standard Oil Co. 1.
26-20-5e Clarke, United Carbon Co. 1.
12-9-4e Kerr, Central Co. Inc. 2.
17-17-5e West Virginia, Gulf Refining Co. 1.
17-19-4e Fee, Hatcher and Evans 3.
6-19-5e Fee, Ladell et al 34.
20-19-4e McErwin, Maurey Drilling Co. 4.
25-19-2e D'Arbone Ouachita Natural Gas Co. 2.
37-21-4e Allison, Ouachita Natural Gas Co. 1.
18-19-5e Lynch, Palmer Corp. 1.
10-20-4e Patton, United Carbon Co. 1.
5-19-1e Nelson, Gulf Refining Co. 1.

Rigs

7-19-4e Cole, Palmer Corp. 4.
30-17-1e Grang Pace, George L. Pace et al
2-19-4e Ladell, Southern Carbon Co. 4.
21-22-1e Tuguris, C. E. Camette 1.
8-23-1e Frost-Johnson, Clark Creek Oil Co. 2.
32-21-4e White, United Carbon Co. 1.

NATCHITOCHES PARISH

Wells Drilling

78-7-5w Cockfield, Brothers et al 1.
21-7-9 L. L. L. L. Co., Davison et al 1.
3-13-7 Ayers, Forrest trustee 2.
39-7-7 L. L. L. L. Co., Gulf Refining Co. A-1.
85-7-6 Nona Roge, Humble Oil and Refining Co. 1.
41-10-7 Russell, McCormick et al 1.
20-8-8w L. L. L. L. Co., Ohio Oil Co. 1.
18-8-9w Fisher, E. Self 1.
4-7-7 Fee, Weaver Brothers Lumber Co. 1.

No rigs; no shut down.

RAPIDES PARISH

Wells Drilling

29-5-2e Barrow, Hincey and Macke 1.
41-4n-2w Ball, Seip et al 1.

Shut Down

7-5-3w Wettermark, Minnesota Oil Corp. 1.
12-4-1e Vada, Love et al 1.

RED RIVER PARISH

Wells Drilling

13-11-10 Powell, Alden Drilling Co. 1.

RICHLAND PARISH

Wells Drilling

32-17-6e England, Gulf Refining Co. 1.
23-18-8e Ches-Wyman, Gulf Refining Co. 1.
3-14-5e Texsas Delta, Roxana Petroleum Corp. 1

SABINE PARISH

Wells Drilling

9-7-12 Bowman, L. M. Emlet 5.
11-6-11 L. L. L. L. Co., Magnolia Petroleum Corp. 1.

Rigs

8-7-13 Sabine Lumber Co. L. M. Emlet 1.
12-4-13 Mills, Godchaux et al 1.
23-5-12 Wyatt Lumber Co., Reliance Drilling Co. 1.

WEBSTER PARISH

Wells Drilling

22-21-10 Cox, Humble Oil and Refining Co. 2.
30-19-10 Bruner, I. J. Laborde 1.
25-23-10 Lewis, Magnolia Petroleum Co. 1.
21-21-10 Turner, Magnolia Petroleum Co. A-3.
27-21-10 Josey & Massey, R. W. Norton 1.
22-21-10 Bank of Cotton Valley, Ohio Oil Co. 4.
29-23-11 Oakley, Smitherman and McDonald 1.
21-22-10 Munn, Southern C. O. P. Co. and Ramsey 1.

No rigs; no shut down.

WINN PARISH

Wells Drilling

23-10-1e Allen, Allen et al 2.
21-13-2w Sanders, Allen Drilling Co. 1.
23-10-1e Harper, O. W. Clark 9.
26-10-1e Harper, O. W. Clark 10.
23-10-1e Urania, Natural Gas and Fuel Corp. F-1.
4-12-1w Edenborn, Ohio Oil Co. 2.

Rigs

28-9-3w Edenborn, Dodge et al 12-A.
28-13-3w Milan, J. C. Long 1.
27-10-1e Albritton, F. A. Shannon 1.

Shut Down

6-10-2w Sullivan, Cedar Creek Petroleum Co. 1.
6-10-2w Eagles, J. H. Hall 1.

MISCELLANEOUS

Wells Drilling

23-16-10 Thomas, Woodley and Collins 1.
12-20-3w Davis, Buckley and Palmer 1.

Rigs

34-20-12e Garden Homes, T. A. Snell 1.

UNION COUNTY

Wells Drilling

9-18-17 Primm, Calgo Oil Co. 1.
8-16-16 Fee, G. J. Childs 4.
31-15-16 Stout Lumber Co., Dyer Bros 4-A.
16-16-15 Cook, Gladys Belle Oil Co. 5-A, 9.
8-18-14 Van Hook, Grimes and Jones 10.
3-16-15 Hardy-Murphy, Gulf Refining Co. 42.
4-16-15 Hardy-Murphy, Gulf Refining Co. 43.
20-17-16 Slaughter, Gulf Refining Co. A-1.
6-16-16 Werner, Gulf Refining Co. 48.
23-17-16 Flenniken, H. M. Harrell 7.
8-18-15 Fitzgerald, F. C. Henderson 2.
18-16-15 Smith, F. C. Henderson 3.
21-17-16 Snydor, Humble Oil and Refining Co. 2.
20-17-16 Goodwin, Humble Oil and Refining Co. 2.
26-17-16 Goodwin, Imperial Oil and Gas Co. 1.
21-17-16 Parker, Imperial Oil and Gas Co. 2, 3.
3-16-15 Graves, Lion Oil and Refining Co. 10.
17-17-16 Mitchell, Lion Oil and Refining Co. A-17.
8-16-16 Childs, Magnolia Petroleum Co. 3.
20-17-16 Halsey, Magnolia Petroleum Co. 5, 6.
8-16-16 Hessler, Magnolia Petroleum Co. 4.
28-16-16 Murphy, Magnolia Petroleum Co. 1.
17-17-16 Slaughter, Magnolia Petroleum Co. 3.
14-19-12 Lewis, Matthews et al 1.
4-16-15 Vestal, Murdock et al 4.
17-16-15 Vestal, Murdock et al 1.
9-18-13 Cordell, Natural Gas and Fuel Corp. 1.
21-17-16 Stocks, Ohio Oil Co. 3.
36-18-12 Hollis, Peer Oil Corp. 1.
8-16-15 Bilyew, Pure Oil Co. 7.
10-16-15 Lawton, H. Ramage C-6.
21-17-16 Goodwin, Reynolds and Marr 4.
14-16-15 Murphy, Sam Richardson M-2.
9-17-16 Dumas, Rovenger Oil Corp. 3.
16-17-16 Graham, Rovenger Oil Corp. 5.
16-16-15 Cook, Simms Oil Co. 12.
9-18-13 Simmons, Simms Oil Co. and Sun Oil Co. 1.
3-16-15 Graves, Southern C. O. P. Co. 10.
3-17-16 Slaughter, Southern C. O. P. Co. B-5.
15-16-15 Wells, Southern C. O. P. Co. A-5.
6-18-15 Reynolds, Standard Oil Co. 4.
9-16-15 Hardy, Standard Oil Co. 37.
4-18-16 Walt, A. H. Stoltz 1.
9-16-15 Flenniken, Sunny Jim Oil Co. 3.
4-16-15 Calloway, The Texas Company 8.
4-16-15 Hays, Texas Company 8.
21-17-16 Snydor, Unity Petroleum Co. 1, 2, 3, 4.
6-18-13 Cordell, Phillips Co. et al 2.
22-17-13 McGough, Wingfield et al 1.

Rigs

1-16-17 LaGrone, Arkansas Fuel Oil Co. 8.
7-16-16 Howard, Ferguson Drilling Co. 2.
1-16-17 Hidges, W. H. Gilliland B-1.
8-18-15 Pratt, F. C. Henderson 2.
10-16-15 Giller, Hollayfield and McFarland 14.
21-17-16 Parker, Imperial Oil and Gas Co. 4.
9-16-15 Murphy, Keen and Woolf Oil Co. 3.
7-16-16 Freeman, Magnolia Petroleum Co. 2.
8-16-16 Childs, Magnolia Petroleum Co. 4.
10-18-13 Thompson, Marine Oil Co. 1.
10-18-16 Hill, H. O. Meller 1.
15-17-16 Milner, J. L. Meek 2.
10-16-15 Lawton, Natural Gas and Fuel Corp. B-7.
6-17-16 Duke, Owens et al 1.
24-16-15 Ezell, S. L. Ramage 1.
15-17-16 Harrell, Rovenger Oil Corp. 4.
33-16-16 Murphy, Simms Oil Co. 1.
3-17-16 Slaughter, Southern C. O. P. Co. B-6.
22-18-13 Peck, Tharpe et al 1.

Shut Down

1-17-16 Murphy, Ackerly et al 1.
13-18-15 Hollis, Belmont et al 1.
8-18-12 Garner, Bonderant et al 1.
1-16-16 McDonald, F. A. Book 1.

OUACHITA COUNTY

32-15-15 Goodwin, Gulf Refining Co. 12.
33-15-15 Umsted, Gulf Refining Co. A-22, A-23.
28-15-15 Hildebrant, Humble Oil and Refining Co. 10.
27-15-16 Neeley, W. R. Keever, 2.
4-16-15 Hays, Lion Oil and Refining Co. 5.
35-15-17 Clawson, A. Meek 3.
2-14-18 Ratch and Cartier, J. D. Reynolds 1.
28-15-15 Berg, Roxana Petroleum Corp. 7.
32-15-15 Umsted, Standard Oil Co. B17.
34-15-15 Synder, Sure Oil Co. 4.
22-14-17 Yarbrough, Vandiver et al 1.
31-15-19 Watson, Magnolia Petroleum Co. 6.
31-15-19 Hall, Ohio Oil Co. 5.

Rigs

21-14-17 Reynolds, L. T. Grayson 1.
5-16-15 Umsted, Humble Oil and Refining Co. 13.
28-15-16 Hughes, A. Meek, trustee 8.
27-15-16 Hardin, Sun Oil Co. 7.
28-15-16 Schoolhouse, A. M. Sutton 2.
31-15-19 Hall, Ohio Oil Co. 4.

Shut Down

13-15-17 Berg, W. H. Copenhaven 2.
32-15-15 Bennett, Roxana Petroleum Corp. A-4.
22-15-19 Davis, Arco Oil Co. 1.

COLUMBIA COUNTY

No drilling; no shut down.

Rigs

31-17-22 Huggins, Gulf Refining Co. 1.
30-16-21 Runyon, Haynes et al 1.
15-17-22 Gantt, Maier et al 1.

NEVADA COUNTY

Wells Drilling

9-14-21 McKinney, Autrey Oil Co. 1.
10-14-21 Bodcau, Humble Oil and Refining Co. 4.
1-14-21 Grover, Humble Oil and Refining B-2.
12-14-21 Groves, Wright Oil Co. 1.

Rigs

11-14-21 Wallace, Autrey Oil Co. 1.
1-14-21 Groves, Humble Oil and Refining Co. C-2.
2-14-21 Waters, Humble Oil and Refining Co. 1.

BRADLEY COUNTY

Wells Drilling

33-15-11 Arkansas Timber Co., Magnolia Petroleum Co. 1.
7-15-11 Southern L. Co., McMurry et al 1.
2-16-12 Southern L. C., Wingfield et al 1.
36-16-11 Southern L. Co., Phillips Petroleum Co. 1.

No rigs; no shut down.

MISCELLANEOUS

Wells Drilling

20-15-7 Bledsoe, Rhodes and Kirker 1.
16-11-14 Guidor, Delmar Oil Co. 1.
35-13-5 Olga, McClintock and Goodka 1.
17-11-25w Nichols, Frank S. Myers 2.
7-3-10 Hinsley, DeCem Oil Co. 1.
18-19-24 Allen, Arkansas Fuel Oil Co. 5.
3-20-24 Red River, Kensaw Petroleum Co. 2.
2-13-31 Allen, Grote et al 1.
10-11-31 Hawkins, Mellick Oil Co. 1.

No rigs.

Shut Down

7-17-15 Fee, Pine Prairie Oil Co. 1.
31-16-10 Hall, Kingland Oil Co. 1.
4-13-31 Waldrop, G eason et al 1.
26-14-27 Priest, W. D. Nash et al 1.

ROCKY MOUNTAIN AREA

WYOMING

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Big Muddy ...	0	0	0	0	0	4	4
Salt Creek	32	2,408	1	0	16	117	133
Lance Creek ..	1	0	1	0	0	2	2
Big Horn Basin	2	18	1	0	2	57	59
Lost Soldier and Carbon Co. .	1	60	0	0	1	30	31
Rock River district	5	124	4	0	0	8	8
Fremont Co. ..	3	0	3	0	0	29	29
Osage	0	0	0	0	2	4	6
Natrona Co. ..	1	0	1	0	1	12	13
Baxter Basin ..	0	0	0	0	0	7	7
Lincoln & Uintah Cos.	0	0	0	0	4	32	36
Miscellaneous..	0	0	0	0	2	29	31
Total Sept...	45	2,610	11	0	28	331	359
Total Aug....	47	5,288	4	1	34	328	362
Difference ..	2	2,678	7	1	6	3	3

MONTANA

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Kevin Sunburst	48	6,030	24	1	11	69	80
Cat Creek and Miscellaneous	4	25	1	2	5	75	80
Total Sept...	52	6,055	25	3	16	144	160
Total Aug....	48	5,779	13	2	15	143	158
Difference ..	4	276	13	0	1	1	2

COLORADO

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Total Sept. ...	3	600	2	0	16	89	115
Total Aug.	7	320	3	1	10	100	119
Difference ..	4	280	0	1	8	1	4

UTAH

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Total Sept.	0	0	0	0	8	32	28
Total Aug.	0	0	0	0	3	21	24
Difference ..	0	0	0	0	3	1	4

NEW MEXICO

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Total Sept. ...	11	667	3	0	10	145	155
Total Aug. ...	15	900	4	0	8	146	154
Difference ..	4	233	1	0	2	1	1

BIG MUDDY

Wells Drilling

9-33-76 Crary, Texas Prod. Co. 33.
8-33-76 Humphrey, Continental Oil Co. 39.
8-33-76 Humphrey, Continental Oil Co. 40.

Shut Down

3-33-76 Fenix, Continental Oil Co. F-4.
Rigs, 0; wells drilling, 4; total, 4.

SALT CREEK

Rigs

6-39-78 SE. Mt. and Gulf 8-A.
35-40-79 SE. Midwest Oil Co. 31-A.
34-39-78 NW, Mammoth Oil Co. 302.
34-39-78 NW, Mammoth Oil Co. 305.
28-39-78 NW, Mammoth Oil Co. 405.
28-39-78 NE. Mammoth Oil Co. 406.
13-38-78 SW, Wyoming Teapot Oil Co.
16-39-78 NE. Nicolaysen et al.
19-40-78 NE, Norris Oil Co. 18-A.
10-38-78 NW, Mammoth Oil Co. 302.
2-39-79 NE, Sinclair Wyoming 11.
6-39-78 NE. Mt. and Gulf 29-A.
31-39-78 SE. Teapot Development Co.
1-39-79 SE, Continental Oil Co. 11-A.
5-39-78 NW, Continental Oil Co. 11-A.
17-39-78 SE, Argo Oil Co. 2-M.

Wells Drilling

25-40-79 NW, Wyo. Oil Fields 33-A.
23-40-79 NW, Wyo. Oil Fields 15.
14-40-79 SE. Wyo. Asso. 22.
2-39-79 NE. Wyo. Asso. 16-A.
26-40-79 NE, Wyo. Asso. 13-L.
26-40-79 NW, Wyo. Asso. 21-L.
26-40-79 NE, Wyo. Asso. 13-L.
26-40-79 NW, Wyo. Asso. 21-L.
26-40-79 NE, Wyo. Asso. 19-L.
26-40-79 NW, Wyo. Asso. 22-L.
26-40-79 SW, Wyo. Asso. 22-L.
26-40-79 NW, Wyo. Asso. 18-L.
23-40-79 SW, Wyo. Asso. 22-L.
26-40-79 NW, Wyo. Asso. 13-L.
23-40-79 SE. Wyo. Asso. 1-L.
26-40-79 SE. Wyo. Asso. 21-L.
3-39-79 NE. Salt Creek Cons 1-L.
35-40-79 NE, Midwest Oil Co. 18.
26-40-79 SW, Midwest Oil Co. 18-L.
25-40-79 SW, Midwest Oil Co. 16-L.
25-40-79 NW, Midwest Oil Co. 22-L.
36-40-79 NW, Midwest & Wyo. Asso. 26-A.
26-40-79 SW, Midwest & Wyo. Asso. 4-A.
36-40-79 SE. Midwest & Wyo. Asso. 19-A.
23-40-79 NW, Wyoming Oil Fields 34-A.
35-40-79 SE, Wyoming Asso. 21-LSD.
35-40-79 NW, Wyoming Asso. 24-L.
24-40-79 SW, Wyoming Asso. 18-L.
25-40-79 SW, Wyoming Asso. 31-A.
3-39-79 NE. Salt Creek Cons. 3-A.
35-40-79 NE. Midwest Oil Co. 22-L.
34-40-79 NE. Midwest Oil Co. 15-L.
35-40-79 SW. Midwest Oil Co. 21.
1-39-79 NE. Midwest Oil Co. 8-A.
16-40-79 H. V. Meabon et al.
23-40-79 SW, Wyoming Oil Fields 4-A.
25-40-79 NE, Wyoming Oil Fields 21-A.
34-40-79 SE. Wyoming Asso. 1-L.
35-40-79 NW. Wyoming Asso. 31-L.
34-40-79 NE. Wyoming Asso. 36-L.
35-40-79 NW, Wyoming Asso. 15-L.
35-40-79 NW, Wyoming Asso. 8-L.
26-40-79 SW, Wyoming Asso. 31-L.
35-40-79 SE. Wyoming Asso. 4-L.
26-40-79 NE, Wyoming Asso. 20.
23-40-79 SW, Wyoming Asso. 29-A.
34-40-79 NE, Wyoming Asso. 36-L.
34-40-79 SE. Wyoming Asso. 1-A.
30-40-79 SE. Wyoming Asso. 26-A.
2-39-79 NE. Wyoming Asso. 26-A.
31-40-78 NW. Salt Creek Cons. 9-A.
19-40-78 SW. Midwest Oil Co. 11-A.
23-40-79 SW. Midwest Oil Co. 3-A.
22-40-79 NW. Midwest Oil Co. 33-A.
12-40-79 SW, Midwest & Wyo. Asso. 14-A.
36-40-79 SE. Midwest & Wyo. Asso. 11-A.
36-40-79 NE, Midwest & Wyo. Asso. 29-A.
36-40-79 NW, Midwest & Wyo. Asso. 6-A.
36-40-79 SW, Midwest & Wyo. Asso. 13-A.
25-40-79 NW, Wyoming Oil Fields 19-L.
23-40-79 SW, Wyoming Oil Fields 16.
14-40-79 SW, Wyoming Asso. 13.
24-40-79 SW, Wyoming Asso. 16
26-40-79 NW, Wyoming Asso. 34.
35-40-79 NW, Wyoming Asso. 24.
26-40-79 NE. Wyoming Asso. 28.
26-40-79 NW, Wyoming Asso. 33.
34-40-79 NW, Wyoming Asso. 24.
3-39-79 NE. Salt Creek Cons. 1-A.
35-40-79 SW, Midwest Oil Co. 3-SD.
35-40-79 SW, Midwest Oil Co. 6-L.
35-40-79 SW, Midwest Oil Co. 13-L.
26-40-79 SW, Midwest Oil Co. 15-L.
26-40-79 SW, Midwest Oil Co. 3, 4.
35-40-79 NW, Midwest Oil Co. 6-A.
35-40-79 SW, Midwest Oil Co. 31-A.
27-40-79 SE, Midwest Oil Co. 30-AS.
7-39-79 SE, Continental Oil Co. 8-A.
14-40-79 NE. Midwest Oil Co. 15-A.
5-39-79 NW, Western States O. and L.
28-40-79 SW, Jupiter Oil Co. 34-S.

Shut Down

26-40-79 NE, Wyoming Asso. 4-L.
35-40-79 SW, Midwest Oil Co. 31-L.
35-40-79 NE, Midwest Oil Co. 16-L.
26-40-79 SW, Midwest Oil Co. 18-L.
25-40-79 NW, Midwest Oil Co. 31-L.
35-40-79 NE, Midwest Oil Co. 16-L.
26-40-79 SE, Midwest Oil Co. 1-L.
35-40-79 SW, Midwest Oil Co. 31-L.
23-40-79 SW, Midwest Oil Co. 1-L.
36-40-79 NE, Wyoming Oil Fields 36-L.
26-40-79 NE, Wyoming Asso. 4-L.
26-40-79 NE, Wyoming Oil Fields 22-L.
23-40-79 SE, Wyoming Oil Fields 6-L.
34-40-79 SE. Salt Creek Cons. 36-L.
26-40-79 NE, Wyoming Asso. 31-L.
23-40-79 SE, Midwest Oil Co. 16-L.
23-40-79 NW, Wyoming Oil Fields 36-L.
2-38-78 SE, Staley-Foley Synd. 34-A.
35-39-78 SW, Stanley-Foley Synd. 16-A.
26-40-79 SE, Wyoming Asso. 22-L.
10-40-79 SE. Empire State Oil Co. 25-A.
28-39-78 NE, Mammoth Oil Co. 101.
29-39-78 NE, Mammoth Oil Co. 108.
28-39-78 NE, Mammoth Oil Co. 302.
28-39-78 NW, Mammoth Oil Co. 205.
4-38-78 NE, Mammoth Oil Co. 101.
23-39-79 NE, Evans Oil Co.
29-39-78 NE, Omaha Lusk Oil Co.
6-39-78 NE, Mt. and Gulf, 34-A.
32-40-78 SW, Jupiter Oil Co. 27-A.
2-39-79 NW, Midwest Oil Co. 15-L.
23-40-79 SE, Wyoming Oil Fields 4-L.
35-40-79 SW, Midwest Oil Co. 34-L.
34-40-79 SW, Continental Oil Co. 35-A.
23-40-79 SW, Wyoming Asso. 19-L.
34-40-79 NW, Wyoming Asso. 34-½.
2-39-79 NW, Midwest Oil Co. 3-L.
23-40-79 SE. Wyoming Asso. 33-L.
Rigs, 16; wells drilling, 117; total, 133.

LANCE CREEK

Wells Drilling

4-35-65 Putnam, Ohio Oil Co. 3.
35-36-65 Apex, Buck Creek O. & G.
Rigs, 0; wells drilling, 2; total 2.

BIG HORN BASIN

Rigs

36-43-91 State, Utah Oil Ref. Co. 2.
5-47-90 Hetzler, Ohio Oil Co.

Wells Drilling

2-56-98 Brown, Allen Oil Co. 2.
36-43-91 State, Utah Oil Ref. Co. 3.
5-48-90 Norwood, Carter Oil Co. 1.
32-58-99 Tip No. 7, Hardrock Oil Co. 1.
8-51-100 Sonners, Ohio Oil Co. 3, 4.
15-55-97 Lot 43, Standard of Calif.
31-48-90 Tensleep, Ohio Oil Co. 3.
31-58-99 Elk Basin, Midwest Ref. Co. 2.
5-43-90 Avery, Utah Oil Ref. Co. 1.
26-43-91 Ft. Collins, Utah Oil Ref. Co. 1.
35-43-91 Weller, Utah Oil Ref. Co. 2.
24-56-98 Garland, Prod. & Refg. 2.
11-40-90 Garry Oil & Dev. Co.
15-49-91 Shaffer & Tilley.
18-46-92 Washakie, Ohio Oil Co. 4.
18-44-93 West Zimmerman Butte Oil Co.
20-52-101 NE. Washington Oil & Gas.
14-47-102 Big Horn Dev. Co.
21-53-101 Taylor Brothers.
7-46-92 Washakie, Ohio Oil Co. 2.
5-51-97 SW, C. M. Carroll et al.
9-54-95 SW, Wisconsonn-Hines Co.
15-44-95 SW, F. L. Pierce.
19-54-93 Crystal Creek Synd.
22-47-100 NW, Prairie Oil & Gas.
19-46-98 State, Ohio Oil Co. 41, 42.
-56-98 Elk Buttes Oil & Gas.
34-43-91 SE, Union Oil Co. 1-A.
28-43-91 NW, Union Oil Co. 1-A.
31-43-93 Utah Oil Ref. Co. 3.
33-43-94 SW, Wyoming Montana Oil Co.
17-46-98 Washakie, Ohio Oil Co.
11-49-102 T. A. Stancliffe.
29-56-97 SW, Utah Southern Oil Co.
8-43-91 Murphy Dome, Pro. & Refs. 1.
33-56-98 Cross Gas, Ohio Oil Co. 2.
9-46-101 Union Oil of Calif.

Shut Down

28-44-95 NE, F. A. McPherson.
2-44-96 F. A. McPherson.
2-47-100 Midwest Ref. Co.
4-91-100 Florence Oil Co.
35-57-91 NE, American Indian Oil Co.
3-55-97 Griffin, Allen Oil Co.
34-56-97 Linton, Allen Oil Co.
31-45-99 NW, Kasoming Oil Co.
27-46-98 Rankin, Dickie Oil Co.
8-46-98 Big Horn Dev. Co.
19-51-92 Bruce Holding Co.
34-43-92 C. D. Markham et al.
10-54-95 SE. Westland Oil Co.
35-55-95 Westland Oil Co.
11-49-102 Omar Oil & Gas Co.
10-56-98 Tumador Oil Co.
19-51-92 Torchlight Oil Corp.
5-54-95 SW, Royal Oil & Ref. Co.
Rigs, 2; wells drilling, 57; total, 63.

LOST SOLDIER AND CARBON COUNTY

Rigs

12-19-87 Marland Oil Co.

Wells Drilling

11-26-90 Prairie Oil & Gas 68-A.
11-26-90 Prairie Oil & Gas 73-A.
7-26-89 Prod. & Refs. 5.
35-20-88 Prod. & Refs. 2.
34-22-90 SW. A. A. Akers 1.
11-26-90 Prairie Oil & Gas 47-A.
29-26-87 Prod. & Refs. 3.
14-21-84 St. Marys, Prod. & Refs. 1.
3-27-90 Goode, Texas Prod. Co. 5.
16-26-88 General Petroleum Co.
11-26-90 Prairie Oil & Gas 65-A.
11-26-90 Prairie Oil & Gas 71-A.
14-20-88 Lake Valley Oil Co.
30-26-87 Prod. & Refs. 1.
3-26-90 Prairie Oil & Gas 72-A.
29-26-87 Prod. & Refs. 18.

Shut Down

25-26-88 Hughes Royalty Co.
28-21-86 Grenville, Prod. & Refs. 1.
36-26-88 SE. M. M. Armstrong.
23-26-87 SE. Marvin Oil Co.
3-26-90 Sand Hills Oil Co.
28-26-88 Govt. Land, Columbia Pet. Co.
4-26-90 SE. Sand Hills Oil Co. 4.
9-26-90 SE. Major Oil Co.
25-25-89 NW. E. R. Goode.
24-27-90 SW. Annabelle Wyoming.
21-26-89 Portland Wyoming 3.
28-26-86 Portland Wyoming 1, 2.
3-25-86 Govt. Land, General Pet. Co. 2.
Rigs, 1; wells drilling, 30; total, 31.

ROCK RIVER DISTRICT

Wells Drilling

1-18-78 Dutton Creek, Midwest Ref. Co. 6-X.
2-19-78 H. & C., Ohio Oil Co. 11.
34-20-78 SE. M. L. Lundy.
8-17-77 SE, Texas Prod. Co.

Shut Down

12-16-74 SW. G. A. Briggs 1.
34-23-79 Central Pipe Line Co.
10-18-77 Carbon County Oil Co.
12-27-77 McLaughan et al.
Rigs, 0; wells drilling, 8; total, 8.

FREMONT COUNTY

Wells Drilling

22-6-101 Keenan, Texas Prod. Co. 1.
30-2-2 Prod. & Refs. 5.
26-27-93 American Workers Oil.
10-32-95 Prod. & Refs. 5.
21-1-1 Bridger Oil Co.
19-27-95 Brimmer, Prairie Oil & Gas 2.
9-31-98 Martin F. Fold.
14-32-80 Meyers Pet. Co.
13-28-93 Spencer et al.
10-28-92 SE. Union Oil Co.
27-6-3 Kinney Coastal Oil Co.
21-1-1 Wyoming Syndicate.
14-32-95 NW. Riverton Pet. Co.
15-5-1 Carter, Union Oil Co.
30-1-2 William M. Campbell.
27-3-1 Lot 4., Pilot Butte Oil & Gas Co.
15-32-95 SE. Texas Prod. Co.
17-33-94 Winter-Baker Interests.
27-1-1 Garner, Union Oil Co.
29-32-98 Frank England, Trustee.

Shut Down

36-37-94 Wyoming Syndicate.
6-6-2 SW, Union Oil Co.
18-26-95 Sage Creek Pet. Co.
28-27-95 Fremont Pet. Co.
32-6-2 Miles City Pet. Co.
3-1-2 NE. Teton Pet. Co.
4-31-98 Derby Dome Wyoming.
4-31-98 Burnside Oil Co.
24-32-95 Seel Oil Asso.
Rigs, 0; wells drilling, 29; total, 29.

OSAGE

Rigs

30-46-63 NE, Glenn Oil Co.
31-47-63 L. B. Hanson.

Wells Drilling

Fawcett Ranch, Harry Briggs et al.
42-46-63 Wyoming Oil & Gas.

Shut Down

10-45-61 Lenhardt & Briggs.
8-46-63 Griffith Oil Co.
Rigs, 2; wells drilling, 4; total, 6.

NATRONA COUNTY

Rigs

Greybull Dome, Foreman et al.

Wells Drilling

3-33-83 Fargo Western Oil Co. 29.
3-33-83 Fargo Western Oil Co. 28.
13-33-80 Wheeler, Millard et al.
Pine Mt. Dome, Harris & White.
26-35-84 NW, Brennan et al.
3-37-85 Notches, Midwest Ref. Co.
32-38-83 Wilson, Marland Oil Co.
32-34-77 Geary Dome, Continental Oil Co.

Shut Down

15-32-82 Bessemer Bend Dev. Co.
5-39-80 NW. Vernon Oil Co.
10-35-85 New York Oil Co. 2.
Rigs, 1; wells drilling, 12; total, 13.

LINCOLN AND UINTAH COUNTIES

Rigs

16-27-113 Midwest & Utah Oil Ref. Co.
31-28-113 Tip Top Oil Co.
12-29-113 Cretaceous Oil Co.
4-26-113 Wyoming Reserve Oil Co.

Wells Drilling

9-29-113 Guy B. Hockett et al.
16-27-113 Good and Nutting.
34-27-113 Beneficial Oil Co.
27-27-113 SE. Beneficial Oil Co.
14-21-117 NE. Pioneer Oil Co.
34-27-113 SW. Beneficial Oil Co.
27-27-113 NW. Beneficial Oil Co.
30-15-118 NE. Stanburg Pet. Co.
22-27-113 NW. W. F. Atkin et al.
27-27-113 NW. Reese Oil Co.
36-27-113 SW. Squires Oil Co.
3-26-113 SW. Superior Oil Co.
26-27-113 NW. Wooten Interests.
3-26-113 NW. Midstate Oil Co.
Near Afton, Great Western Oil Co.
3-26-113 Fawcett-McPherron Ints.
16-26-113 Fawcett-McPherron Ints.
15-21-117 Pacific Properties Co.
6-15-118 Vulcan Oil Co.
9-26-113 Uintah-Trans. Continental Oil.
17-27-113 SE. Western Slope Oil Co.
20-26-113 Murphy Davis Co.
35-27-113 Associated Producers Co.

Shut Down

20-19-116 C. C. Conger et al.
32-19-110 Johnson, Granger Oil & Gas.
22-28-112 NE. Margaret Kay.
24-15-118 NW. Mrs. D. Connel 3.
22-26-113 Big Piney Oil Co.
4-26-113 Uintah Oil Co.
3-26-113 Wyoming Reserve Oil Co.
32-19-116 Conger et al.
6-15-118 Olson Brothers.
8-26-113 Reese Oil Co.
Rigs, 4; wells drilling, 33; total, 37.

BAXTER BASIN

Wells Drilling

11-19-104 Prod. & Refs. Marland.

Shut Down

26-17-104 Associated Oil Co. 3.
23-17-104 Associated Oil Co.
24-17-104 SE. Montical Oil Co.
8-16-104 SE. Montical Oil Co.
30-18-104 Midwest Ref. Co. 6-AX.
27-27-104 Montical Oil Co.
Rigs, 0; wells drilling, 7; total, 7.

MISCELLANEOUS

Rigs

Baggs Dome, M. M. Armstrong.
Agate Basin, Hollingsworth et al.

Wells Drilling

21-31-69 Ackard et al.
5-31-70 Criterion Oil Co.
35-17-70 Horse Creek, Carter Oil Co.
17-47-82 Rider, Carter Oil Co.
21-48-82 Graham, Carter Oil Co. 2.
17-46-82 R. C. Tarrant et al 2.
12-26-27 Platte Valley Drilling Co.
8-44-60 Briggs & Sartain.
5-51-67 C. M. Carroll et al.
28-42-79 Seattle Syndicate.
Guernsey District, Illinois Syndicate.
Buffalo District, Kinney Coastal Oil Co.
16-33-68 SW. Schuyler et al.
1-32-68 A. E. Mauft et al.
32-62-67 SW. Western Consolidated Oil Co.
4-32-82 SE. Carl Sackett et al.
7-48-82 Fairway Oil Co.
24-26-62 Foreman et al.

Shut Down

24-49-64 Osage Trust Co.
31-50-69 Rosett Oil Co.
20-29-68 Nebraska Oil Co.
18-29-68 Glendo Oil Co.
1-44-61 Osage Trust Co.
9-41-80 Newcomb et al.
31-37-67 NW. Atlas Oil Co.
11-45-65 Reserve Oil Co.
28-47-65 Gose Syndicate.
35-48-64 Lilley, Pump Creek Oil & Gas.
13-26-66 A. E. Jacobs.
Rigs, 2; wells drilling, 29; total, 31.

MONTANA

Cat Creek

Wells Drilling

11-15-29 Cooke-Coolidge.
12-15-29 NE. Standard of Calif. 7.
12-15-28 Van Tassel, California Co.

Shut Down

23-14-28 Winnet Pacific Oil Co.
21-15-30 Masser, Kessling Oil Co.
1-15-29 Custer Oil Co.
9-15-29 Frantz Corp.
36-16-28 Hardrock Oil Co.
5-15-29 Midwest Ref. Co.
7-15-29 NW. Hogan et al.
11-15-29 Fifty Six Pet. Co.
15-15-30 Swartz et al.
18-16-28 Peerless Oil Co.
Rigs, 0; wells drilling, 13; total, 13.

KEVIN SUNBURST

Rigs

8-34-2 SW. Hardrock Oil Co.
15-34-1 Burwash, Minot Oil Co.
20-34-1 Zacher, Minot Oil Co.
20-34-1 Zacher, Adams Oil Co.
22-35-2 Lorenson, L. W. Hill 8.
34-35-2 Parker, California Oil Co. 4.
22-35-2 Halter, L. W. Hill 6.
30-35-1 Maughans, Ohio Oil Co. 14.
18-34-1 Johnson, Ohio Oil Co. 2.
29-35-1 Benton, Arronow Oil Co.
20-31-2 McBride, Canadian Oil Co.
17-31-1 Potlatch Oil Co. 2.

Wells Drilling

14-34-2 Bachsteiner, Ohio Oil Co. 1.
15-34-2 Moffat, Ohio Oil Co. 1.
34-26-2 Reeg, Ohio Oil Co. 4.
30-35-1 Maughans, Ohio Oil Co. 13.
24-34-1 Claypool, Fulton Oil Co. 1.
35-35-2 Abell, Ferdig Oil Co. 11.
28-35-2 Lorenson, California Co. 4.
30-35-1 Emmons, Dakota Montana 17.
17-34-2 Larson, Pondera Valley 2.
33-34-1 Sauby, Wells Oil Co. 1.
30-35-1 Stannard, Security Oil Co. 10, 11.
30-35-1 Stannard, Security Oil Co. 12.
8-34-1 Rooney, Mouse River Oil Co. 1.
26-35-3 Rock, Maharg Oil Co.
13-32-2 Broderick, Peterson et al.
36-33-2 State, Sunburst Huston.
30-35-1 Anderson, Western Drilling Co.
8-35-2 Gillis, Alberta Kevin Oil Co.
27-35-1 Knuton, Great Spirit Oil Co.
1-32-2 NE, Sunburst Oil & Gas.
11-35-2 Lind Carter Oil Co. 3.
10-35-2 Howling, Carter Oil Co. 2.
26-35-2 Abell, California Co. 8.
25-35-2 Newman, California Co. 3.
34-35-2 Parker, California Co. 3.
30-34-1 Clarence Prosise.
27-35-2 Lashbaugh, Swift Current Oil Co.
31-35-1 Allen, 31 Petro Co.
14-34-2 Jenkins, Creel Sunburst 21.
18-34-1 Hanna, Queen City Oil Co.
32-35-1 Putnam, Pan Canadian Oil Co. 2.
7-34-1 Carlson, Dakota Montana 2.
10-34-1 Cagney, O'Neil Bros. Marland.
31-32-1 Zenith-Orcutt 1.
25-35-2 Knobes, Howe, McCormick.
25-35-2 Stannard, Wyomont R. & R. 8.
1-34-2 Steele, Oldsbury Syndicate.
7-34-1 Russel, Reservation Oil Co.
30-35-1 Stannard, Rose Oil Co. 3.
9-32-2 Suhr, Sunburst Prod. Co.
33-34-2 NE. Frazier Oil Co.
8-34-2 Pittsburgh Montana Oil Co.
32-36-2 Roundsley, Sunburst Oil & Gas.
24-32-1 Shelby Syndicate.
26-35-2 Halter, Sunburst Prod. Co.
18-34-1 Skinner, Creel et al.
32-35-1 Putnam, Keystone Oil Co.
7-34-1 Harte, Russel et al.
30-35-1 Tri State Oil Co. 3.
35-35-2 Sunburst Oil & Gas.
32-35-2 SW. Lorenson et al.
29-35-1 Maughan, Sweeney Oil Co. 4.
17-35-2 Frazier, Rice Oil Co.
30-35-1 Stannard, Tri State Oil Co. 5.
1-34-2 Steele, Bruce Radigan 2.
8-34-2 Hurley, McDonald et al.
1-34-2 Faunce, McIntire Beckett.
23-36-3 Carroll, Red Top Oil Co.
18-33-2 Halverson, Minot-Shelby.

Shut Down

5-35-2 Bell-Fey No. 1.
1-35-1 Berger, Sand Point Oil Co.
19-35-1 Kalispell, P. M. K. Oils.
28-35-1 Shelby Federal Miller.
23-33-1 Webb, Shelby Oil & Gas.
12-34-1 Peterson, Lucky Forty Oil Co.
13-32-2 Campbell, Campbell Syndicate.
16-34-2 Rainbow Oil Co.
21-34-1 Adams, Potlatch Oil Co.
Rigs, 11; wells drilling, 69; total, 80.

MISCELLANEOUS

Rigs

5-12-25 Minn-Flatwillow Oil Co.
24-15-14 Fullerton Oil & Gas.
12-10-32 Hibbard Oil Co.
4-28-30 Mid-Continent Oil Co.
24-23-2 Rainbow Syndicate.

Wells Drilling

17-3-23 SE. McDermott et al.
34-22-1 Great Northern Mutual.
33-16 28 NW. Onkmont Pet. Co.
32-4-16 SW, Empire Oil & Gas.
25-1-21 NE. Linco Oil Co.
35-30-3 Hi-Land Oil Co.
25-11-24 Areolite Oil Corp.
12-22-2 Mann, Allen Oil Co.
18-22-3 Elkhorn Oil Co. 1, 2.
7-8-57 Wolf Creek, Calif. Montana.
31-21-20 Round Butte Oil Co.
23-1-21 Delmar Oil Co.
24-1-21 Diamond, Record Pet. Co. 3.
36-1-21 State, Springdale Oil Synd.
24-1-21 SW. Record Pet. Co. 4.
Medicine Hat, Roth Syndicate.
34-23-2 Allen Oil Co.
1-31-31 Big Dome Oil Co.
28-8-45 Montana Belle Oil Co.
25-17-24 California Co.
21-37-5 Utah Western Pet. Co.
31-7-21 SW. Atlantic Pet. Co.
13-8-2 Coal Ridge, Montana Oil & Gas Co.
34-16-28 H. H. Swarts, Jr.
9-31-19 California Co.

Shut Down

18-2-23 Murray Brothers 4.
32-25-30 Butler Oil & Gas.
24-30-1 Continental Prod. Co.
17-3-19 Snyder, Mid Northern Oil Co.
4-27-20 California Co.
20-24-1 McDonald et al.
3-27-8 Robinson et al.
McDonald Creek, Wilson Fisher 3.
32-36-2 Weill Syndicate.
7-8-58 California Montana.
17-2-18 NE. Gibson Land Co.
28-28-28 Glosgow Exploration.
25-12-1 Ainsworth, Neudigate Interests.
18-30-3 Great Northern Producers.
4-2-25 SW. McMinnemin et al.
24-10-39 Jones et al.
2-26-2 Jones, M. M. Edwards.
5-2-23 NE. American Indian Oil Co.
35-32-32 SW. Bowdoin Oil & Gas.
7-27-7 Circle Oil Co.
26-10-29 Stellar Oil & Gas.
32-30-2 Drake Oil Co.
18-6-23 Minnemier & Newman.
6-13-24 Fulton Oil Co.
7-21-1 Tri City Oil Co.
12-11-13 Kalispell Synd.
2-28-2 NE. Dry Fork Oil Co.
8-4-22 Hoosier Oil Co.
24-5-8 Potter Basin Oil & Gas.
10-18-2 NE. Moscow Idaho Oil Co.
28-30-4 NW. West Virginia Oil Co.
24-14-25 NW. Henry Seibert.
14-31-1 NW. Dunkirk Oil Co.
6-2-24 American Indian Oil Co.
9-10-38 SE. Stellar Oil & Gas.
5-35-1 NE. F. G. Oatland.
Rigs, 5; wells drilling, 62; total, 67.

COLORADO

Rigs

33-5-91 Knowlton, Texas Prod. Co. 9.
19-8-68 Krause, Union Oil Co. 1.
7-9-68 Dement, Union Oil Co. 1.
30-8-68 Johnson, Union Oil Co. 1.
8-6-86 Edwards, Texas Prod. Co.
9-20-69 Griffith, Wallace Oil & Mining Co. 3.
10-3-44 Yuma Valley Oil Co.
1-8-68 Morrel, Petroleum Prods. Co.
17-8-68 Ft. Collins Chief Oil Co.
29-10-68 American Pet. Co.
12-38-78 Green Mountain Pet. Co.
27-2-70 Rainbow Oil Dev. Co.
31-9-68 Midwest Oil & Gas Co.
26-9-69 NW. Farrel et al.
36-10-68 State, Seneca Oil Co.
10-10-61 SE. Dougherty et al.

Wells Drilling

5-6-86 Irwin, Texas Prod. Co. 1.
27-31-94 Freeman, Texas Prod. Co. 1.
7-9-68 Gault-Platt, Union Oil Co. 3.

35-48-19 General Pet. Co.
28-35-2 SW, Wert-Franklin et al.
30-8-68 Whitaker-Blunck, Union Oil Co. 3.
30-8-68 Whitaker-Blunck, Union Oil Co. 2.
18-6-86 Quaintance, Texas Prod. Co. 2.
18-6-86 State, Texas Prod. Co. 2.
31-2-102 Emerald, Texas Prod. Co. 2.
10-4-91 Wick, Texas Prod. Co. 3.
16-3-91 Henderson, Marland Oil Co.
30-2-102 Rangeley, Midwest Ref. Co. 2.
30-2-70 Spurgeon, Boulder Pet. Co.
34-17-70 Mutual Oil Dev. Co.
13-1-46 Yuma, Yuma Oil Dev. Co.
23-33-12 Pulliman, Erdman et al.
32-33-12 Hutchinson, E. J. Miley.
8-20-68 Loy, Rosie Oil Co. 2.
36-8-68 State, Atlantic Pet. Co.
30-10-68 Buckeye, Union Oil Co. 4.
6-9-68 Seeds, Union Oil Co. 2.
30-8-68 Blunk, Union Oil Co. 2.
36-9-69 State, Union Oil Co.
15-21-65 Union Oil of Colo.
10-24-69 Panuco, Exploration Co.
14-1-68 Smith, Retter Oil Co.
27-20-69 NW, Good Luck Oil Co.
22-12-100 William T. Morris et al.
1-20-70 Continental Oil Co. 573.
9-20-69 Continental Oil Co. 575.
9-20-69 Continental Oil Co. 576.
33-5-91 Knowlton, Texas Prod. Co.
22-4-92 Parkinson, Midwest Ref. Co. 4.
24-2-103 Tidewater Associated Oil Co.
33-1-70 Denies, Repollo Oil Co.
30-10-68 Plummer, Union Oil Co. 1.
7-9-68 Yockey, Union Oil Co. 1.
4-6-59 Belmont Oil Co.
16-10-68 Buckeye, A. A. Rolleatone Co.
28-3-65 Watkins, Miller Oil Co.
24-6-91 Patterson, Platte Valley Pet. Co.
1-2-68 Orrison, Municipal Oil Co.
33-8-69 NE, Hobart Pet. Co.
21-20-69 Majada Oil & Gas Co.
13-33-12 NW, W. H. Hall et al.
34-32-65 No Jack Oil Co.
8-9-69 Warren, Union Oil of Colo.
6-7-68 Brown, Fifty Four Oil Co.
13-33-13 Hall Murray Oil Co.
5-8-103 Gypsy Oil Co.
4-6-68 Webster, Douglass Oil Co.
5-6-68 Majestic Oil Co.
4-32-67 Tulsa Oil Leasing Co.
34-8-68 Ruff, Victory Oil Co.
9-12-68 Panuco, Exploration Co.
1-9-68 NW, Great Northern Oil Co.
30-27-45 NW, Lamar Oil Co.
34-17-67 Mutual Oil Dev. Co.
12-9-69 McCullam, Continental Oil Co.
16-21-65 Columbia Heights Oil Co.
9-17-67 John Jr., Red Creek Oil Co.
Fremont County, Parkdale Oil & Gas.
28-28-52 South East Colorado Oil Co.
30-10-68 Warren, Poudre River Oil Co.
1-8-68 Warren, Consolidated Oil Fields Co.
16-20-69 E. R. Goode et al 2.
17-9-68 Elder, Farrel's Associates.
34-8-69 Ruff, Equitable Oil Co.
Florence Field, Florence Pet. Co.
8-8-102 Smith, Eun Oil Co.
11-4-8 H. H. Temple et al.
6-23-62 State, Bent County Oil & Gas.

Shut Down

31-18-51 Mineral Exploration Co.
17-5-64 Hog Ranch, Roland Oil Co.
25-22-65 NE, San Carlos Oil Co.
13-8-69 Hoff, Centennial & Sunset.
23-6-69 Wellington Oil Co.
3-32-12 Leidecker Pet. Co.
25-1-69 Everhard, Boulder Oil Corp.
25-24-1 SW, Utah Southern Oil Co.
32-20-63 Baxter, Salida O. & R. Co. 2.
31-2-96 NE, White River Dev. Co.
11-1-44 Hildreth, Hersick Drilling Co.
28-7-92 NE, Boyles Oil Co.
17-34-2 C. W. Kirkwood.
6-8-102 Linquist, Midwest Ref. Co.
28-27-70 Gehrung, Sand Hills Oil Co.
32-31-61 Colorado Oil & Gas Co.
23-6-69 Ruckvetter, Wellington Oil Corp.
19-5-69 Alps, Gateway Oil Co.
19-5-69 Alps, Gateway Oil Co.
23-9-69 Waverly, Consolidated Oil Fields Co.
32-10-68 SE, Imperial Oil Co.
25-8-68 NE, American Pet. Co.
24-9-69 Hanna, Wellington Oil Co.
6-7-68 NE, Bonner Oil Co.
17-17-64 NW, Peerless Oil Co.
4-45-16 Gilmore Oil Co.
24-2-103 Rigby, Midwest Ref. Co.

Rigs, 16; wells drilling, 99; total, 115.

UTAH

Rigs

36-26-20 Shaffer, Midwest Ref. Co. 2.
32-26-21 Promel, Snowden-McSweeney.
30-34-19 Elk Ridge, Hughes No. 1.
16-22-19 Armstrong Oil Co.
16-28-20 Haasood, Utah Southern & Equity Oil Co.
18-23-21 Crescent Dome Oil Co.

Wells Drilling

6-30-21 Empire Gas & Fuel Co.
34-25-21 Big Six Oil Co.
1-30-20 Utah Pet. Co.
8-26-22 Utah Oil Dev. Co.
4-22-19 SE, Crescent Eagle Oil Co.
31-9-8 Utah Pet. Co.
19-9-8 E. J. Raddatz.
27-41-19 Utah Southern Oil Co.
35-21-16 Culbertson, Marland Oil Co.
36-26-20 Shaffer, Midwest Ref. Co. 1.
19-22-21 Utah Oil Ref. Co.
36-40-90 Utah Oil Ref. Co. 2.
31-43-10 Utah Oil Ref. Co. 3.
16-2-5 State, Western Empire Oil Co.
32-14-17 Monroe Oil Co.
23-3-24 Clay Basin, Prod. & Refs. 2.
17-27-20 Shaffer, Midwest Ref. Co. 1.
23-14-92 Mt. States Pet. Co.
27-21-19 Western States Dev. Co.
4-19-25 Charles Orchard et al.

Shut Down

2-12-20 L. L. Travis.
21-22-22 Hope Syndicate.
6-14-13 San Juan Dev. Co.
33-42-17 Monumental Oil Co.
12-19-13 Ute Pet. & Utah Southern.
13-4-16 Castle Dale Oil Co.
27-16-4 Producers Oil Co.
Lakeside Dome, W. R. Holmes.
Diamond Fork, Franko Utah Oil Co.
25-13-13 Utah Central Oil Co.
Diamond Fork, Gustaven Oil Co.
Rosell District, Lakeside Oil Co.

Rigs, 6; wells drilling, 32; total, 38.

NEW MEXICO

Rigs

16-17-32 State, Maljamar Oil Co.
34-17-33 SW, Henderson-Dexter-Blair.
28-17-28 SW, Navajo Oil Co. 2.
20-31-1 Paul S. Ache et al.
9-30-11 F. G. McMahon et al.
19-36-34 SW, Sinclair & Fenton.
17-31-8 Huntington Park Oil Co.
10-4-28 NW, Oliver Weil.
5-16-28 State, Lever et al.
36-1-21 Ingram, Navajo Oil Co.

Wells Drilling

18-17-32 Mitchell, Ohio Oil Co. 1.
28-18-28 Allen Toomey, Ohio Oil Co. 7.
28-18-28 Flynn, Welch & Yates 50.
5-17-28 Govt. Land, New Mexico Oil Co.
22-18-34 State, McDonald et al.
11-16-32 SW, Caprock Oil Co.
15-11-26 NE, Rodgers et al.
30-14-9 New Mexico Royalty Co.
1-17-9 Sante Fe, Hurst et al.
10-18-28 Dunn, Flynn, Welch & Yates 3.
4-15-16 Jones, Marland Oil Co.
9-19-28 Henderson-Dexter-Blair.
22-17-31 NE, Skelly Oil Corp.
1-18-21 SE, Sullivan et al.
16-8-27 Campbell, Colorado Gas & Fuel Co.
26-6-3 Acme Oil Co.
32-7-10 SW, California Exploration Co.
24-31-11 South West Dev. Co.
11-29-11 Ross, Bloomfield Realty Co.
8-29-8 Union Oil & Mining Co.
3-27-17 Table Mesa, Continental Oil Co. 8.
5-17-32 Mitchell, Maljamar Oil & Gas Co.
3-17-32 Pearsall, Maljamar Oil & Gas Co.
13-18-32 McDonald & Jewett, Maljamar Oil & Gas.
4-17-34 NW, Philips & Welch.
10-20-20 State, Cook-Ironsides.
27-19-38 Govt. Land, Mesculero Pet. Co.
4-17-34 State, A. C. Bridges.
29-17-29 Texas Prod. Co.
24-10-26 NE, Dorsey et al.
11-3-32 Gurley, Contillon et al.
4-1-30 NW, Captain Oil Co.
8-6-1 Navajo Oil Co.
10-3-17 NW, Navajo Oil Co.
13-6-2 Hub Oil Co.
25-7-2 Curtis & Mays.
32-7-10 Minerman et al.
10-29-24 Eureka Oil Co.
10-28-26 Moore, Bevins & James.
2-29-19 Rattlesnake, Continental Oil Co. 17.
15-21-33 NW, Covert et al.
29-17-18 Wilson, Texas Prod. Co.
32-4-6 McDonald, Ohio Oil Co.
30-20-10 Benedum & Trees.
29-10-10 Duke City Pet. Co.
22-25-21 Embar Oil Co.
8-26-18 Tocito, Continental Oil Co.
15-17-32 Beardsley, Maljamar Oil & Gas Co.
5-18-32 Walker, Maljamar Oil & Gas Co.
1-18-32 Stroup, Maljamar Oil & Gas Co.
5-17-28 SE, Miley Oil Co.
18-7-21 Ventura Oil Co.
16-18-28 Compton-Hausenfus-Lewellyn.
15-18-28 Wlans, Harris & Rhens.
20-30-10 Pittsburgh Oil & Dev. Co.
29-1-21 Steel-Rhinesmith.
17-18-28 SW, Cummins No. 2.
4-18-28 SE, Pueblo Oil Co.
4-21-27 Olson, M. M. Miller.
15-29-11 Bloomfield Oil & Gas.
15-23-24 California Co.
16-29-11 SE. C. S. Ringle.
34-29-11 C. S. Ringle.
4-21-30 SW, Van Cleve & Kronen 2, 3.
24-10-27 NW, R. C. Christman.
8-2-14 Simmons et al.
17-28-28 NW, W. G. Hurst.
9-10-28 SW, Danciger Bros.
33-17-20 SW, Wooley-Jones.
15-29-11 Butler-Stonacher Synd.
19-21-19 NE, F. A. Black Drilling Co.
25-17-26 Patterson & Stumpf.
15-15-29 Southern Exploration Co.
7-19-1 La Ventana.
22-18-27 SE, Colorado Drilling Co.
18-18-28 NE, Sidler Drilling Co.
24-30-13 SW, Portage Oil & Gas.
19-18-29 Bujac-Wade-Murphy.
34-11-11 Gardner-Congress Oil Co.
30-30-15 Bowman, Williams et al.
21-25-30 Sun Oil Co.
8-11-23 Gibson Oil Co.
25-31-18 Bartless, Union Oil of Calif.
16-1-27 McAdoo, Navajo Oil Co.

Shut Down

5-18-27 NE, Swartz et al.
18-22-17 SE, Blue Bird Oil Co.
20-7-1 Arnold et al.
17-20-11 SW, Hubbel & Hall.
12-30-11 Stein, Miley Oil Co.
34-11-11 H. D. Adders.
3-13-14 State, Dysart et al.
21-14-9 S. Dysart et al.
12-11-11 S. Dysart et al 2.
16-12-15 State, S. Dysart et al.
11-5-35 Sanders, Frio Oil Co.
32-6-1 New Mexico Dev. Co.
26-7-2 Swisher & Wallace.
27-17-16 Chebeaque Syndicate.
3-18-27 Mann Compton.
24-8-23 SE, Lewis et al.
34-31-15 W. R. Childers.
1-17-9 Welch et al.
3-13-2 Williams et al.
23-11-26 SW, O. Jones.
1-6-27 SW, Steel-Rhinesmith.
9-6-24 Grady Oil Co.
4-2-20 Hinkle et al.
12-17-31 Nichols, Ohio Oil Co.
22-19-27 NW, Valley Oil Corp.
8-30-9 Huntington Park Oil Co.
31-19-28 Pruitt, Ohio Oil Co.
21-17-28 Johnson, Ohio Oil Co.
10-27-19 Navajo, Continental Oil Co. 7.
31-3-15 NW, Wyo. Colo. Oil Co.
22-19-27 State, Oscar Howard.
21-30-11 Home Gas Co.
2-19-26 Peckenbaugh, Eureka Oil Co.
1-3-32 NE, Gurley Oil Co.
24-21-11 SE, Angelus Mining Asso.
6-29-9 Detroit Oil Corp.
29-29-11 Montezuma Syndicate.
9-30-11 Rainbow Oil Co.
16-13-9 Relstead No. 2.
25-13-21 SE, Standard Pet. Co.
11-20-29 Rawson, William Dooley.
26-18-18 New Mexico Oil Co.
30-28-11 New Mexico-Milwaukee Synd.
23-18-15 E. M. Treat & Co.
28-18-28 SE, Quillen & Dunnet.
15-12-23 NW, Zeppenfield Co.
16-1-7 NE, Ft. Summer Oil Co.
33-11-35 Tilton & Croft.
23-16-20 Young, Ohio Oil Co.
5-22-19 NE, F. A. Black Drg. Co. 2.

Rigs, 10; wells drilling, 145; total, 155.

WYOMING

Wells Completed.

26-40-79 NE, Wyoming Oil Fields 27.. 100
26-40-79 NW, Wyoming Asso. 22-A.... 100
30-40-78 NW, Wyoming Asso. 17-A.... 60
34-40-79 SE, Wyoming Asso. 7-A..... 50
34-40-79 NE, Wyoming Asso. 36-A.... 50
26-40-79 SE, Wyoming Asso. 36-A.... 75
31-40-78 NW, Salt Creek Cons 11-A.... 50
11-40-79 SW, Midwest Oil Co. 24-A.... 40
26-40-79 SE, Midwest Oil Co. 6..... 425
13-40-79 NW, Midwest & Wyoming Asso. 20-A 40
21-40-79 SE, Hugh Johnson 11-X..... dry
18-39-78 Tract L, Ohio Oil Co. 3..... 30
26-40-79 SW, Wyoming Asso 19-L..... 356
35-40-79 NE, Midwest Oil Co. 19-L.... 125
23-40-79 NW, Wyoming Oil Fields 15-A 72
14-40-79 NE, Midwest Oil Co. 21-A.... 80
35-40-79 SW, Midwest Oil Co. 23..... 75
35-40-79 NW, Wyoming Asso. 31-A.... 60
36-40-79 NE, Midwest & Wyoming Asso 26-A 40
35-40-79 NE, Midwest Oil Co. 1-A..... 50
12-40-79 SW, Midwest & Wyoming Asso 22-A 36
23-40-79 NE, Wyoming Asso 13-A..... 40
24-40-79 NE, Wyoming Asso. 19-A..... 40
2-39-79 NE, Wyoming Asso. 16-A..... 35
23-40-79 SE, Wyoming Oil Fields 18.. 16
34-40-79 SE, Salt Creek Cons 34-A..... 50
11-40-79 SE, Midwest Oil Co. 15-A..... 30
31-40-78 SW Salt Creek Cons. 24-A.. 40
26-40-79 NE, Wyoming Oil Fields 23.. 30
32-40-78 Brown, Continental Oil Co. 20 80
32-40-78 Continental Oil Co. 29-AXS.. 80
11-39-79 SW, E. T. Williams 15-A..... 65
18-35-65 NE, Union Oil Co. 1..... dry
10-56-95 SE, Allen Oil Co..... dry
21-53-101 Cody Oil & Gas 2..... 18
25-26-87 Prod. & Refs. 17..... 60
25-21-79 SE, Southwestern Pet. Co.... dry
36-21-79 NW, Southwestern Pet. Co.... dry
3-19-78 H. & C. Ohio Oil Co. 4..... 124
23-21-79 SE, Southwestern Pet. Co.... dry
26-21-79 SE, Southwestern Pet. Co.... dry
18-28-92 Crooks Gap, Producers & Refiners ..... dry
13-29-93 Producers & Refiners 2..... dry
13-28-92 Producers & Refiners 3..... dry
33-34-82 Bradford Wyoming..... dry

Wells completed 45
Production 2610
Dry 11

MONTANA

Wells Completed

17-15-30 SW, L. F. Sontag..... dry
21-35-1 White, Ohio Oil Co. 2..... 9
30-35-1 Maughan, Ohio Oil Co. 12..... 18
4-35-2 Baker, Ohio Oil Co. 10..... 7
36-35-2 State, Homestake Exploration 15 1900
32-35-2 Halloran, Homstake Exploration 6 ..... dry
1-34-2 Lewis, Ferdig Oil Co. 5..... 80
22-35-2 Newman, California Co. 5..... 30
26-35-2 Abell, California Co. 7..... dry
31-35-1 Allen, Big West Oil Co. 23.. 10
32-35-1 Caine, Fifty Six Pet. Co. 17.. 125
31-35-1 Emmons, Dakota Montana 15 dry
31.35-1 Emmons, Dakota Montana 16 dry
11-34-3 Freemke, D. A. S. Oils 3.... dry
27-35-2 Lashbaugh, O'Neil Bros 4.... 400
4-35-1 Hocksprung, O'Neil-Carter... dry
26-35-3 Sohn, Trap Oil Co. 1..... dry
11-34-1 Peterson, Cascade Oil Co.... dry
4-32-3 Petters, Shield Valley Oil Co. dry
35-35-2 Byrne, Cope Dev. Co. 1..... dry
26-35-2 Abell, Hardrock Oil Co. 3.... 3
21-35-2 Halter, L. W. Hill 4..... dry
12-35-2 Barth, Colonel Kobes..... dry
24-35-2 Hagerty, Coeur D'Alene 3.... 30
11-34-1 Peterson, Fitzpatrick, Winston 13
9-34-2 DeGroat, Johnson Oil Synd. 3 dry
30-35-1 Stannard, Security Oil Co. 8.. dry
36-35-1 Stannard, Security Oil Co. 9. dry
2-34-1 Heanel, Bi State Oil Co. 1... dry
6-34-1 Adams, Chisholm Oil Synd. 4 25
13-35-3 Campbell, Royal Canadian 4.. dry
19-35-1 Kalispell-Kevin, Arcus Oil 3. 100
18-34-2 Skinner Barnhill Units 1..... gas
23-35-2 Zimmerman, Cope Development Co. 2..... 20
21-35-2 Halter, L. W. Hill 5..... 50
32-35-1 Putnam, First International. dry
33-35-2 McCormick, Diamond Oil 7.. 100
1-34-2 Lewis, Ferdig Oil Co. 8..... dry
29-35-1 Anderson, Red Deer Oil Co. 7 20
15-34-2 Morton, Trapp Oil Co. 1..... 20
1-34-2 Lewis, Ferdig Oil Co. 6..... dry
1-34-2 Lewis, Ferdig Oil Co. 7..... 10
1-34-2 Lewis, Ferdig Oil Co. 8..... dry
32-35-1 Caine, 56 Petroleum Co. 18... dry
13-34-2 Morton, Rice Oil Co. 1..... dry
31-35-1 Allen, 31 Petroleum Co. 2..... 60
27-35-2 Lashbaugh, Wolf Development Co. 2 ..... dry
27-35-2 Smoke California Co. 6..... 2000
35-35-2 State, Homestake Explor. 16 1000
14-15-29 Mutual, Continental Oil 25
Cabin Creek Dist. Minnesota Northern 1 gas
Bowes Structure, Hardrock Oil Co. 2.. gas

Wells completed 52
Production 6055
Dry 25
Gas 3
Gas production 44,000,000

COLORADO

Wells Completed

10-4-91 Wick, Texas Production Co. 4 600
9-12-62 Ullum, Roland Oil Co..... dry
30-27-45 Johnson, Chesapeake Oil..... dry

Wells completed 3
Production 600
Dry 2

NEW MEXICO

Wells Completed

8-18-28 New State, Ohio Oil Co. 2..... dry
18-18-28 SE, Danciger-Beeson..... 10
21-18-28 NE, Lackawana Oil Co. 7..... 35
33-18-28 NW, Snowden McSweeney 2.. 100
30-4-9 NE, Red Feather Oil Co..... dry
-32-1 Albuquerque, Prairie Oil & Gas ..... dry
22-29-11 Bishop, Smith & Wiley 3..... 12
9-30-11 Clark, Mexahoma Co. 2.. 25
3-18-28 Flynn, Welch & Yates 49..... 75
3-27-17 Continental Oil 8..... 200
3-19-19 Continental Oil 9..... 150

Wells completed 11
Production 607
Dry 3

EASTERN FIELDS

Summary of Wells Completed

Field—	Comp.	Prod.	Dry	Gas
Allegany	48	96	0	0
Bradford	177	376	0	0
Middle Field	9	74	1	1
Venango-Clarion	46	97	4	3
Butler-Armstrong	15	33	3	2
Southwest Pennsylvania	30	122	11	11
West Virginia	93	489	20	38
Southeastern Ohio	120	1,492	21	21
Total September	538	2,778	60	76
Total August	500	2,596	69	76
Difference	38	182	9	0

Summary of Work Under Way

Field—	Rigs	Drg.	Ttl.
Allegany	17	41	58
Bradford	32	131	163
Middle Field	0	5	5
Venango-Clarion	2	30	32
Butler-Armstrong	8	16	24
Southwest Pennsylvania	16	39	55
West Virginia	55	149	204
Southeastern Ohio	49	136	185
Total September 30	179	547	726
Total August 31	144	560	704
Difference	35	13	22

WELLS COMPLETED ALLEGANY COUNTY

Aeseltine, Atwood & Stebbins 1
Fee, Empire Ltd. & Breckenridge 1
Murphy, First Nat. Bank, Shinglehouse 2
Pratt, Sturdevant & Herrick 4
Nobles, Giggee & Tuller 1
Fee, First Trust, Wellsville, No. 92 1
Wheaton, Dusenberry et al 1
Fee, McKean Natural Gas 1
Fee, Albert Oil 1
Fee, Hill & Son ..... wtr
Fee, Empire Gas & Fuel, Ltd. 2
Feld, Lagent, Helen Randall 8
South Penn Oil, A. D. Keeland et al... 1
Fee, Citizens Nat. Bank, Wellsville 62 1
Fee, G. W. & Phebe Birtell 1
Fee, W. E. McMurdy et al 1
Fee, Isaac Willets Est. 1
Fee, J. E. LeSuer et al 1
Fee, L. W. Shaner et al 1
Fee, F. L. Williams 2
Fee, M. J. Crowley et al 1
Coast and South Penn Oil, F. C. Shaner et al 1
Fee, C. W. Mead 1
Fee, Hazelwood Oil 1
Fee, Gilligan & Dermitt 4
Fee, W. T. Lane et al 1
Keller et al, Keller & Keller 1
Kinley Oil, W. J. Weller et al 1
Fee, Lavens Est. et al 1
Perkins, W. H. Lobaugh, Tr. 1
Fee, Childs & Bartoo 1
Tract 1, Hazelwood Oil 55 1
Tract 1, Hazelwood Oil 44 1
Fee, Andrews Oil 1
Fee, Miller & Bovaird 1
Brown et al, Polley Bros. 3 4
Carls, H. F. Carls & Sons 1
Fee, George H. Zink 1
F. D. & R. Black & Derby 1
F. D. & B., James J. Paul et al 1
Kurtzhaltz, E. G. & F. W. Stephan 1
Fee,. N. V. V. Franchot, Mgr., Trust. 1
Brandel, N. V. V. Franchot, Mgr., Trust 1
Lippert, C. M. Lippert et al 1
Fee, Harriet, A. & G. W. Hooker 1
McGuire, M. J. Ball et al 1
Carls, H. F. Carls & Sons 1
Chipmonk Land, South Penn Oil 1

Wells completed 48
Production 95
Water 1

BRADFORD FIELD

Weston Jr., Tr., South Penn Oil 95 3
Weston Jr., Tr., South Penn Oil 96 1
Rounds & Lawrence, South Penn Oil 57 10
Rounds & Lawrence, South Penn Oil 58 10
Fee, Forest Pet. Corp. No. 1 1A26 4
Fee, Forest Pet. Corp. No. 1 1A22 4
Fee, Forest Pet. Corp. No. 1 1A19 4
Fee, M. C. Roat 6 1
Fee, M. C. Roat 7 1
Bartlett Est., J. V. Golden 12 1
Burns et al, Krämpf & McCandless 22 1
Redfield et al, South Penn Oil 107.... 15
Rasey, Lewis Emery 22 4
Fee, E. L. & F. J. Shippey 6 1
Fee, M. Hungiville 25 1
Fee, L. H. Givan 13 1
Franchot, Thos. T. Fox 14 1
Fee, Hooker et al 7 1
Franchot, F. M., Johnston & Son 26.. 1
Fee, Hazelwood Oil 49 1
Fee, L. G. Dana 21 1
Franchot, W. J. Oliver 2 1
Franchot, F. A. Wile et al 12 1
Fee, G. W. Crooks Est. 15 1
Fee, Dana & Dana 44 1
Bing, 398, South Penn Oil 1
Bing, 390, South Penn Oil 1 1
Fee, T. H. Kennedy 2
Bing, 482, South Penn Oil 26 3
Bing, 423, South Penn Oil 14 ..... wtr
Bing, 439, South Penn Oil 100 5
Bing, 582, Associated Prod. 376 8
Bing-Satt, 576, South Penn Oil 114.. 2
Taylor, South Penn Oil 27 1
Hallock & Weston, South Penn Oil 95 1
Middaugh, South Penn Oil 49 1
Rounds, South Penn Oil 55 2
Whipple, South Penn Oil 124 1
Hamlin, South Penn Oil 107 2
Rumsey, South Penn Oil 129 1
Davis, South Penn Oil 26 1
Bing, 151-154, South Penn Oil 31 ..... wtr
Jones, South Penn Oil 214 1
Jones, South Penn Oil 215 1
Hallock & Weston, South Penn Oil 96 . 1
Rounds, South Penn Oil 56 1
Smith, South Penn Oil 125 1
Bing, 212, South Penn Oil 39 1
Moody 54, South Penn Oil 41 1
Bing, 423, South Penn Oil 14 ..... wtr
Bing-Satt, South Penn Oil 114 2
Bing, 400 Acres, South Penn Oil 70 1
Bing, 400 Acres, South Penn Oil 73.... 1
Bing, 533, South Penn Oil 84 ..... wtr
Cotton, South Penn Oil 55 2
Smith, South Penn Oil 123 1
Culbertson Lots, South Penn Oil 55 ... 2
Rew & Hodge, South Penn Oil 51 1
Smith, South Penn Oil 126 1
Bing, 439, South Penn Oil 97 2
Kingua, South Penn Oil 188 2
Bing, 501, South Penn Oil 17 1
Bing, 369, South Penn Oil 27 1
Tract 23, Hazelwood Oil 93 1
Tract 25, Hazelwood Oil 14 1
Tract 1, Hazelwood Oil 21 ..... wtr
Tract 27, Hazelwood Oil 126 2
Bing, 326, Andrus & McDowell 72.... 2
Moore, Pure Oil, Inc. 11 1
Rew, Bovaird & Hamlin 17 1
Bing, 388, C. L. Wann et al 52 1
Bing, 401, J. E. Ward 16 1

Bing, 389, D. W. Daly 44 2
Bing, 428, J. A. Hooper 8 2
Rew, Bovaird & Hamlin 31 2
Bing, 497, Park & Bovaird 38 1
Bing, 269, D. W. Daly 59. . . . 2
Bing, 484, T. H. Kennedy No. 2 143 . . 2
Hodge, South Penn Oil 1
Sill, Hope Oil 2
Pratt, Petroleum Reclamation 1
Pratt, Petroleum Reclamation 1
Whipple, South Penn Oil 2
Enterprise, South Penn Oil 1
Ekas, Lloyd & Piper 3
Ekas, Lloyd & Piper 1
Ekas, Lloyd & Piper 2
Rew, F. D. Gallup et al 2
Rew, F. D. Gallup et al 3
Monroe, Devore et al 2
Fee, W. J. Healy 3
Bingham, H. B. Oil 2
Pratt, Korner Bros. 2
Lovell, Melvin et al 3
Lovell, Melvin et al 2
Gormley, Korner Bros. 2
Hancock, Lenwood Oil 2
Looker, Petroleum Reclamation 1
Murphy, Wilson et al 2
Germer, Linwood Oil 2
Bingham, Barry Bros. 3
Jack, Howard Jack et al 2
Campbell, Miller et al 1
Fee, Webb Est. 2
Bingham, South Penn Oil 2
Taylor, South Penn Oil 2 2
Rew, Brink & Lincoln 3
Brennan, Coit Est. 2
Chambers, Schorman & Williams 2
Morse, Jos. Minnich Est. 2
Hanes, Coast & Storms 2
Meldrum, Wiborg et al 3
Borden, T. B. Wilson 1
Mott, Reclamation Oiy 2
Mott, Reclamation Oil 2
Mott, Reclamation Oil 2
Baldwin, C. B. Kervin 1
Keating, Sloan & Zook 2
Keating, Sloan & Zook 2
Borden, A. J. Douglas et al 1
Marvin, A. L. & L. M. Lilly 1
Middaugh, A. L. & L. M. Lilly 2
Middaugh, A. L. & L. M. Lilly 2
Irvine, C. E. Potter 2
Wommer, Patton & Wilson 1
Borden, T. B. Martin 2
Borden, C. J. Mitchell 1
Borden, Jeutter Bros. 2
Allen, A. Schorman 1
Allen, A. Schorman 2
Mullin, B. Kirley 2
Duke, Staley & Thomas 2
Duke, M. B. Oil (12 wells) 20
Bingham, H. P. McKalip et al 3
Bingham, J. L. Yerdon 2
Bingham, H. P. McKalip 4
Wright, M. D. Wright et al 3
Bingham, Paul Evans et al 1
Bingham, H. E. Camp et al 1
Fee, Curtis & Dunlavey Bros. 3
Rounds, J. W. Kaufman 5
Rounds, N. V. V. Franchot, trust 5
Fee, Mix Creek Oil (4 wells) 15
Fee, Pollock & Pollock 5
Hoffman Est., L. S. Letson 3
Potter, Burdick & Stover (2 wells) . wtr

Wells completed	177
Production	376
Water	6

MIDDLE FIELD

Lot 3,767, F. J. Moser 32 1
T. & W. Oil, A. E. & W. C. Tompsett 77 . . 1
Dennis, R. L. Thomas 12 1
Phillips, J. L. Billstone . . . . gas
Johnson, Johnson Bros. 1
Osten, Rembold, Cozad & Co. 8 5
Osten, Rembold, Cozad & Co. 9 15
Wilson, S. Q. Wilson 41 . . . . dry
Benedict & Brown, J. P. Eaton 5 50

Wells completed	9
Production	74
Dry	1
Gas	1

VENANGO-CLARION

Blair, Reeves & Franklin Trust 48 . . . 1
Kimes, Cross, Smiley et al 28 1
Porter, Smith & Walters et al 36 1
McNellie, Midland Oil 21 1
McNellie, Midland Oil 22 1
Smith, Smith, Brutsche et al 38 2
Clark, Clark & Mong 1 1
Fisher heirs, T. G. & H. S. Phinny 1 . . 1
Fisher heirs, T. G. & H. S. Phinny 2 . . dry
Cox, George H. Torrey 1 1
Cox, George H. Torrey 2 4
Button, J. B. Smithman 42 1
Hood, Moyar & McCombs 88 1
Bowman, National Petroleum 12 . . . dry
P. C. L. & P. Co., Pyle, Price et al 68 . . 1
Foster Farm Oil, Jenkins & Grimm 17 . . 1
Foster Farm Oil, Jenkins & Grimm 18 . . 1
Hasson, Ed Siederman 53 1
Crawford, Crawford, Gregory, Woodburn Acct. & Co. 79 2
Frampton, O. & L., Oil City Natl. 11 . . 1
Horne, Horne Bros. et al 7 1
Miller, C. T. & O. D. McDowell 5 . . . 1
McKinley, Bard & Uber et al 24 1
Irwin, Porter, Irwin & Co. 1 1
McCalmont, People National Bank and Williams 11 1
Plumer, Eakin & Hutchison 45 1
Baum, J. P. Mansfield 9 1
Kapp, Kapp Bros. 2 . . . . gas
Siggin, Sarah A. Lytle 29 2
Jackson, Lynnwood Oil 3 1
Hood, Moyar & McComb 62 2
Sutley, Dodds & Arthur 25 1
Clarion—
Kahle, A. D. Shorts et al 4 1
Schotenburg, Hess & Crawford 1 . . . . gas
O'Neill Bros., D. & H. O'Neill 8 2
Corbett & Vowinckel, H. W. Wilson 2 . . gas
Myers, G. P. Myers 22 . . . . dry
Wentling, H. E. Rugh 4 1
Gabler, Gatesman & Co. 1 . . . . dry
Crawford—
O'Dell, Wilson & Kerr 2 2
Hood, Mead & Hood 18 15
Proper, H. J. Gilson 11 10
Warner, Warner, Caldwell Co. 2 10
Prather, Nutting Oil 24 5
Kerr, Vim Oil 8 10
Small, Cozy Oil 9 5

Wells completed	46
Production	97
Dry	4
Gas	3

BUTLER-ARMSTRONG

Kriess heirs, J. E. Dufford & Co. 1 . . . . dry
Seiders, Battenfelder & Co. 1 6
Hoffman, Jewel & Co. 3 3
Lentz, Battenfelder & Co. 1 2
Shaner & Bellstein, Shaner & Co. 4 . . dry
Holben, Ritzert Bros. & Co. 1 . . . . gas
Daubenspeck, Theodore Scott 3 2
Oesterling, Roy Embrie et al 1 . . . . dry
McCollough, M. B. Finnessy 5 2
Trees, J. C. Trees 2 . . . . gas
Lutz, C. Campbell et al 1 8
Stewart & Co., Stewart & Co. 3 3
Stewart & Co., Stewart & Co. 4 4
Anderson, Crawford & Gregory 4 1
Glenn, Carl Hillard et al 7 2

Wells completed	15
Production	32
Dry	3
Gas	2

ALLEGANY FIELD
Rigs

Fee, Empire, Ltd., & Breckenridge.
Fee, First Trust Co. Wvs. No. 50, et al.
Wheaton, Dusenbury et al.
Fee, McKean Natural Gas.
Fee, Empire Gas & Fuel, Ltd.
Fee, Hill & Son.
Fee, Empire Gas & Fuel, Ltd.
Fee, L. W. Shaner et al.
Fee, Gilligan & Dermitt.
Fee, W. T. Lain et al.
Fee, M. J. Crowley et al.
Fee, Wm. Bartoo et al.
Fee, Lavens Est. et al.
Zaph fee, Separy Oil.
Lippert, C. M. Lippert et al.
Fee, Mary Lippert.
Fee, Kinley Producers.

Wells Drilling

Heseltine, Atwood & Stebbins.
Nobles, Giggee & Tullar.
Pratt, Sturdevant & Herrick.
Fee, Empire, Ltd.
Murphy, First Nat. Bank, Shinglehouse.
Fee, McKean Natural Gas.
Fee, Albert Oil.
Reid, Agent, Citizens Nat. Bank, Wvs. No. 5.
Fee, Empire Gas & Fuel, Ltd., et al.
Fee, Empire Gas & Fuel, Ltd.
Fee, Empire Gas & Fuel, Ltd.
Fee, Citizens Nat. Bank, Wvs. No. 62.
Fee, G. W. & Phebe Birtell.
Fee, J. E. LeSuer et al.
Royce et al, State Bank of Bolivar No. 14.
Fee, J. W. Johnson et al.
Withey Est., Withey & Reeland.
Fee, Gilligan & Dermitt.
Fee, L. C. Whitford et al.
Fee, Hazelwood Oil.
Fee, Mrs. E. F. Richardson et al.
Coast & South Penn Oil, F. C. Shaner et al.
Keller et al, Keller & Keller.
Ballard, F. J. Wilson.
Fee, J. M. Hughes et al.
Kinley Oil, W. J. Weller.
Multrus fee, C. M. Lippert et al.
Fries, N. V. V. Franchot, Mgr., trustee.
Brandel heirs, N. V. V. Franchot, Mgr., trus.
Fee, Miller & Bovaird.
Waters Est., Ray Waters et al.
Ryan, M. Shear.
McCaffery & Westran, Mrs. H. S. Westran.
McCaffery, McCafferv and First National Bank of Allegany.
Fee, C. L. McGavern.
Fee, Harriet & G. W. Hooker.
Carls, Henry F. Carls & Sons.
McGuire, M. J. Ball et al.
Fee, Rehler Bros.
F. D. & B., Black & Derby.
F. D. & B., James G. Paul et al.
Rigs, 17; wells drilling, 41; total, 58.

BRADFORD FIELD
Rigs

Wallace, South Penn Oil 97.
Rounds & Lawrence, South Penn Oil 59.
Fee, Forest Petroleum Corp. No. 1, 1-B5.
Fee, M. C. Roat 8.
Bartlett Estate, J. V. Golden 13.
Franchot, F. A. Wile et al 13.
South Penn Oil, John Jackson 16.
Fee, Lawry & Huston 12.
Fee, J. A. Walters Est. 38.
Fee, Dana & Dana 45.
Griffith et al, C. S. Knabb, tr.
Fee, South Penn Oil.
Fee, Kaber & Coulter 43.
Fee, W. C. Kennedy Co. 56.
Bing, 150, South Penn Oil 74, 75.
Fee, South Penn Oil 72.
Fee, Hillard & Dodge 21.
Kennedy & Clark, Phoenix Oil 166.
Bing, 486, Grant & Mohan 19.
Bing, 581, Associated Prod. 379.
Bing, 533, South Penn Oil 85.
Moore, Pure Penn Oil, Inc., 12.
Bing, 369, D. W. Daly 60.
Bing, 489, T. H. Kennedy No. 2, 145.
Wright, M. D. Wright et al.
Bingham, H. E. Camp Est.
Campbell, N. V. V. Franchot Est.
Rounds, J. W. Kaufman.
Fee, North Branch Oil.
Hoffman Est., L. S. Letson et al.
Potter, Burdick & Stover.

Wells Drilling

Fee, Forest Petroleum Corp. No. 1 1A1.
Fee, Forest, Petroleum Corp. No. 1 1A13.
Fee, Forest Petroleum Corp. No. 1 1A17.
Fee, Forest Petroleum Corp. No. 1 1A2.
Fee, Forest Petroleum Corp. No. 1 1B1.
Fee, Forest Petroleum Corp. No. 1 1B2.
Fee, Ida & W. W. Slike 8.
Fee, M. Hungiville 26.
Clugston, Parker Farm Oil 11.
Fee, E. L. & F. J. Shippey 11.
Fee, Hazelwood Oil 50.
Fee, Hooker et al 8.
Franchot, Thos. T. Fox 15.
Franchot, Maxwell Bros. 10.
Franchot, Holmes et al 14.
Fee, G. W. Crooks, Est. 17.
Fee, South Penn Oil.
Fee, C. B. Kervin.
Fee, W. C. Kennedy Co. 55.
Bing, 150, South Penn Oil 71.
Fee, South Penn Oil 35.
Bing, Hazelwood Oil 127.
Fee, Barry.
Fee, South Penn Oil 31.
Bing, 151, South Penn Oil.
Brown, Hungiville et al.
Hedlund, Holmes Oil 2.
Kennedy & Clarke, Phoenix Oil 165.
Fee, South Penn Oil 188.
South Penn Oil, E. K. Kane 14.
Bing, 188, Harris Oil 34.
Fee, Hilltop Oil 36.
Fee, T. H. Kennedy.
Bing, 399, South Penn Oil.
Bing, 370, Hazelwood Oil 75.
Bing, 423, South Penn Oil 15.
Bing, 440, South Penn Oil 16.
Bing, 582, Associated Prod. 377.
Bing-Satt, 576, South Penn Oil 116.
Bing, 533, South Penn Oil 84.
Bing, 501, South Penn Oil 17.
Bing, 494, South Penn Oil 55, 56.
Bing, 570, South Penn Oil 115.
Bing, 489, T. H. Kennedy No. 2, 144.
Bing, 411, R. M. & James George 29.
Bing, 389, D. W. Daly 45.
Bing, 430, Lane No. 1 et al 72.
Bing, 391, Geo. W. Bovaird 84.
Rew, Bovaird & Hamlin 32.
Bing, 429, Howard & McCullum 90.
Bing, 380, Wilson & Fitzgibbon 81.
Bing, 401, J. E. Ward 17.
Vincent heirs, S. H. Elder et al 19.
Bing, 388, C. L. Wann et al 53.
Kendall, South Penn Oil 57.
Whipple, South Penn Oil 125.
Taylor, South Penn Oil 38.
Middaugh, South Penn Oil 50.
Dent, South Penn Oil 104.
Bing, 151-154, South Penn Oil 32.
Blair, South Penn Oil 014.
Dent, South Penn Oil 016.
Bing, 400 acres, South Penn Oil 71.
Culbertson Lots, South Penn Oil 56.
Smith, South Penn Oil 127, 128.
Bing-Satt, South Penn Oil 115, 116.
Bing, 400 acres, South Penn Oil 73.
Ware, South Penn Oil 81.
Bing, 423, South Penn Oil 15.
Bing, 212, South Penn Oil 40.
Moody, 66, South Penn Oil 02.
Bing, 533, South Penn Oil 85.
Meldrum, Wiborg et al.
Borden, T. B. Wilson.
Mott, Reclamation Oil (2 wells.)
Baldwin, C. B. Kervin.
Keating, Sloan & Zook (2 wells.)
Borden, A. J. Douglas et al.
Middaugh, A. L. & L. M. Lilly (2 wells.)
Wommer, Patton & Wilson.
Borden, C. J. Mitchell.
Baldwin, F. E. Baldwin.
Backus, C. B. Kervin.
Duke, M. B. Oil (8 wells.)
Wright, Cotton & Moore.
Emerson, G. L. Rhodes et al.
Elder, S. H. Elder & Co.
Bingham, Paul Evans et al.
Bingham, J. L. Yerdon.
Hodge, South Penn Oil.
Sill, Hope Oil.
Whipple, South Penn Oil.
Enterprise, South Penn Oil.
Ekas, Lloyd & Piper (3 wells.)
Rew, F. D. Gallup et al (2 wells.)
Fee, W. J. Healy.
Lovell, Melvin et al.
Murphy, Wilson et al.
Germer, Linwood Oil.
Bingham, Barry Bros.
Jack, Howard Jack et al.
Campbell, Miller et al.
Fee, Webb Est.
Bingham, South Penn Oil.
Taylor, South Penn Oil.
Rew, Brink & Lincoln.
Few G. Simpson.
Willett, J. H. Gibson et al.
Brennan, Colt Est.
Fee, W. C. Middlebrough.
Corwin, Simon Bros.
Corwin, L. H. Smith & Sons.
Borden, C. J. Mitchell.
Hoffman Est., Mrs. L. Bell & Mrs. M. Loop.
Weston trustee, G. C. Rice et al.
Rigs, 32; wells drilling, 131; total, 163.

MIDDLE FIELD
Wells Drilling

Wilson, J. C. Goal & Co. 23.
Brennan, E. Pequignot 1.
Lot 269, Pennsylvania Gas 946.
Ulf, Fidelity Petroleum 1.
Phillips, J. L. Billstone.
Wells drilling, 5.

VENANGO-CLARION
Rigs

Anthony, R. L. & J. W. Holtz.
Clarion—
Wolbert, Walters & Co. 1.

Wells Drilling

Foster, H. C. Foster 59.
McNellie, Midland Oil 23.
Fisher heirs, T. G. & H. S. Phinny 3.
Clark, Clark & Mong 2.
Cox, George H. Torrey 3.
McCalmont 225-A, S. P. McCalmont Est 50.
Schoch, Holmes, Bell & Moyar 7.
Crawford, Gregory, Woodburn Acct. & Co. 80.
Myers, Craig, Hoffman et al 15.
Frampton O. & L., Oil City National 2.
McKinley, Bard & Uber et al 25.
Monjar, Hoffman & McKinley 12.
Irwin, Porter, Irwin & Co. 2.
Atwell, Hoffman & Craig et al 31.
Cassidy, Franklin Trust 5.
Shawkey, Alum Rock Gas 2.
Hood, Moyar & McComb 63.
Omega, J. D. Crawford 3.
Hancock, W. H. Neel 13.
Tarr, Bankson Bros. 20.
Blood, J. S. Wallace 16.
Jackson, Lynwood Oil.
Clarion—
Stubler heirs, George Stubler Acct. 2, 6.
Schitenburg, Hess & Crawford 2.
Cohlheep, S. R. Lewis et al 2.
Myers, G. P. Myers 23.
Buck, Vasey, Vensel et al 5.
Stewart, Neely & Clover 4.
McCleary, C. P. McCleary 3.
Forest—
Warrant 3179, Lot 44, South Penn Oil.
Rigs, 2; wells drilling, 30; total, 32.

BUTLER-ARMSTRONG

Bortz, McKees Rock Oil 1.
Behm, C. H. Behm & Co. 1.
Bachman, Hinchberger & Co. 1.
Sthroup, Chas. Hilderbrand 5.
Boggs heirs, R. C. & W. V. Binkerd.
Morgan, I. N. Johns.
Anderson, Crawford & Gregory 5.
Clees, P. F. Clees 5.

Wells Drilling

Wagner heirs, E. C. Hatcher et al 3.
Neel, Dufford, Vensel et al 2.
Peters, L. D. Berry & Co. 1.
McCollough, J. M. McCollough & Sons 1.
Ganns, Ritzert Bros. 1.
Oesterling, M. Waltman et al 1.
Kramer, Southern Oil 6.
Shanor, M. B. Finnessy 18.
Werely, J. A. Elliott et al 4.
Allegheny Industrial School, Allegheny Industrial School 5.
McKinney, Pinkerton et al 1.
Griffith, F. C. Griffith.
Wick Est., Chambers Oil.
Campbell, Mark W. Graham et al 8.
McKinney, Edward McKinney 2.
Jack, Sherwin & Burns 1.
Rigs, 8; wells drilling, 16; total, 24.

WEST VIRGINIA
WELLS COMPLETED
LEWIS COUNTY

Clark, West Fork O. & G. 1 . . . . gas
Brannon, Phil. Gas Co. 1 . . . . dry

HARRISON COUNTY

Marrison, Hope C. & R. Co. 2 . . . . gas

MARION COUNTY

Amos, Hope Gas Co. 1 . . . . gas
Nibbs, S. N. Elliott, 3 40
Thorn, Carnegie Gas Co. 1 . . . . gas

MONONGALIA COUNTY

Bell, Pgh. & W. Va. Gas Co. 2 . . . . gas
Eakin, Pgh. & W. Va. Gas Co. 1 . . . . dry

WETZEL AND TYLER COUNTIES

Antill, Johns Gas Co. 7 . . . . dry
Aberigg, Carnegie Gas Co. 5 5
Ashcraft, Mfrs. L. & H. Co. 1 2
George, Baker & Co. 1 5
Anderson, Carnegie Gas Co. 2 5
Wickham, Borgan Bros. Oil Co. 1 2
Rice, Albert Neely 1 . . . . dry
Virden, Cameron O. & G. Co. 1 . . . . dry

MARSHALL COUNTY

Hennon, F. L. Freshwater 5 5

DODDRIDGE COUNTY

Cunningham, Hope C. & R. Co. 5 15
Noble, Trainer & Travis 1 25
Coleman, Murphy Oil Co. 1 . . . . gas

RITCHIE COUNTY

Fairview M. E. Church, Bickerstaff & Co. 1 . . . . gas
Batson, Carnegie Gas Co. 2 5
Chapman, Carnegie Gas Co. 5 . . . . gas
Prunty, Zinn & Co. 1 5
Morris, Aetna O. & G. Co. 2 . . . . dry
Michael, L. N. Rinehart 3 40
Payne, Snyder Bros. Oil Co. 2 5

GILMER COUNTY

Bartlett, Phila. Oil Co. 1 . . . . gas
Bush, McCall & Co. 1 7

BRAXTON COUNTY

Dobbins, Pgh. & W. Va. Gas Co. 1 . . . . dry
Engle, J. H. Gaines 1 . . . . gas
Bennett heirs, Pgh. & W. Va. Gas Co. 1 . . . . dry

WIRT COUNTY

Newman, Feleral O. & G. Co. 34 1
Rex, Roberts Oil Co. 2 . . . . dry
Rathbone, Roberts Bros. 147 . . . . dry

WOOD COUNTY

McAtee, Decker & B. Smith 3 . . . . dry
Henry, Reed, Athey & Co. 5 5
Volcanic tract, Power Oil Co. 111 . . . . dry
Volcanic tract, Power Oil Co. 98 . . . . dry

PLEASANTS COUNTY

Colvin, Big Bend Oil Co. 1 . . . . dry
Northcraft, Tyler Oil Co. 1 . . . . dry
Hendricks, N. Y. Pet. Co. 5 25
Reynolds, Bradford Supply Co. 1 . . . . dry
Hammett heirs, Faith O. & G. Co 4 40
Noland, Waldsmith & Co. 1 . . . . dry
Eddy, Walnut Run Oil Co. 2 . . . . dry

ROANE COUNTY

Davis, Green Creek O. & G. Co. 1 . . . . gas
Warren, Heck Oil Co. 3 25
School Lot, Morley O. & G. Co. 1 . . . . gas
Smith, Elkins O. & G. Co. 1 . . . . gas

CALHOUN COUNTY

Wolverton, W. H. Bickel 2 . . . . gas
Ferrell, G. L. Cabot 6 . . . . gas
Ward, G. L. Cabot 1 . . . . gas

CLAY COUNTY

Stockley, So. P. O. Co. 24 12
Stockley, So. P. O. Co. 32 7
Stockley, So. P. O. Co. 33 15
Stockley, So. P. O. Co. 35 6
Belcher, So. P. O. Co. 8 30
Belcher, So. P. O. Co. 9 20
Belcher, So. P. O. Co. 10 15
Parker, So. P. O. Co. 2 30
Caste 220 acres, Ohio F. O. Co. 12 15
Caste 220 acres, Ohio F. O. Co. 13 15
Reed, Ohio F. O. Co. 2 35
B. S. & G., Virginia G. & O. Co. 16 10
Lockhart, Virginia G. & O. Co. 1 10
Samples, Chalmers O. & G. Co. 2 . . . . gas

MASON COUNTY

Edgner, Col. G. & E. Co. 1 . . . . gas
Chambers, Col. G. & E. Co. 1 . . . . gas
Lawson, Laurel Dev. Co. 2 . . . . gas
Vickers, Grant Gas Co. 1 . . . . gas
Norse C'k. C. & M. Co., U. F. G. Co. 1. gas
Harless, Union O. & G. Co. 1 . . . . gas
Linville, Cambridge Gas Co. 3 & 4 . . . . gas
Wade, Cambridge Gas Co. 1 . . . . gas

KANAWHA COUNTY

Wehrle, U. F. G. Co. 1 . . . . gas
Taylor, U. F. G. Co. 1 . . . . gas
Bird, United Carbon Co. 4 . . . . gas

BOONE COUNTY

L. R. & P., Pure Oil Co. 26 . . . . gas
Coon, Pure Oil Co. 1 . . . . gas
Coon, Pure Oil Co. 4 . . . . gas
Cassingham & Co., Owens B. & M. Co. 11 . . . . gas
Little Coal Land, Owens B. & M. Co. 4 . . . . gas
Laurel Creek Fuel Co., G. L. Cabot 1 . . . . gas
Lewis, G. L. Cabot 1 . . . . gas
Nelson L. & O. Co., G. L. Cabot 4 . . . . gas

LOGAN COUNTY

Dingess Run C. Co., Wocolock O. & G. Co. 13 . . . . gas

PUTNAM COUNTY

Chapman, Ellis & Atkins 1 . . . . gas

CABELL COUNTY

Chaney, Aetna O. & G. Co. 2 8

MINGO COUNTY

Logan Cannel C. Co., Old Colony Oil Co. 17 . . . . dry
Logan Cannel C. Co., Old Colony Oil Co. 18 25

Wells completed	93
Production	489
Dry	20
Gas	38

LEWIS COUNTY
Rig

M. E. Parsonage, Frey & Co. 1.

Wells Drilling

Jamison, Mud Lick O. & G. Co. 2.
Watson, Mud Lick O. & G. Co.1.

HARRISON COUNTY
Rig

Stonestreet, Clifton O. & G. Co. 5.
Lowndes, Patterson Fork O. Co. 17.
Johnson, Bridgeport O. & G. Co. 1.

Wells Drilling

Rogers, Hoffire & Deegan 2.
Williams, Johnson & Co. 2.
Bramer, Clarksburg L. & H. Co. 2.
Westfall, J. W. Johnson 1.
Williams, Clifton O. & G. Co. 4.
Smith Bros., Reserve Gas Co. 1.
Fitro, S. L. Horner 1.
Carping, Aspurin Oil Co. 1.

MARION COUNTY
Rig
Clayton, Owens B. & M. Co. 2.
Wells Drilling
Haught, Carnegie Gas Co. 1.
Snyder, Owens B. & M. Co. 1.
Baxter School Lot, Tennant Bros. 1.
MONONGALIA COUNTY
Rigs
Tennant, Pgh. & W. Va. Gas Co. 1.
Clovis, Mfrs. L. & H. Co. 2.
Wells Drilling
Moore, Phila. Gas Co. 1.
Hennen, Mfrs. L. & H. Co. 1.
White, Oil & Gas Trust 1.
Wright, Carnegie Gas Co. 1.
Shuman, Carnegie Gas Co. 3.
Wilson, Carnegie Gas Co. 3.
WETZEL & TYLER COUNTIES
Rigs
Morgan, Carr Bros. 1.
Mills, Richwood Oil Co. 14.
Lough, Mfrs. L. & H. Co. 1.
McGinnis, H. L. Lambert 8.
Yocum, Nyers O. & G. Co. 1.
Gale heirs, Samuel & Gale 13.
Wells Drilling
Fox, Mfrs. L. & H. Co. 1.
Wade, Carnegie Gas Co. 3.
Stump, Mfrs. L. & H. Co. 2.
Hostettler, Carnegie Gas Co. 2.
Church, Maple Pitt Gas Co. 1.
Hixenbaugh, Bell Bros. 1.
Six, Francis O. & G. Trust 1.
Kennedy, Maxon Oil Co. 1.
Bartrug, Phila. Oil Co. 3.
Cornell, Amer. O. D. Co. 2.
Miller, Hope C. & R. Co. 2.
MARSHALL COUNTY
Rigs
Jochum, Spider O. & G. Co. 1.
Earnest, Mfrs. L. & H. Co. 1.
Campbell, Conaway & Co. 1.
Wells Drilling
Newman, Wood & Co. 1.
Thomas heirs, Mfrs. L. & H. Co. 3.
Howard heirs, G. B. Patterson 2.
Baker, Decem Dev. Co. 1.
McCuskey heirs, Waynesburg Gas Co. 1.
DODDRIDGE COUNTY
Rigs
Stuttler, W. D. Gribble 1.
Eddy, McIntyre Bros. O. Co. 1.
Hudson, Varner & Co. 1.
Day, Pgh. & W. Va. Gas Co. 3.
Wells Drilling
Ford, Buckeye O. & G. Co. 1.
Yeater heirs, Mfrs. L. & M. Co. 2.
Smith, Eastern Union Gas Co. 1.
Ross, Trainer & Travis 1.
Robinson, S. B. Travis 1.
Ahouse, Mfrs. L. & H. Co. 1.
Freeman, Clifton O. & G. Co. 14.
Hutson heirs, G. L. Cabot 1.
Underwood, Dennison & Co. 1.
Leggett, Pgh. & W. Va. Gas Co. 1.
RITCHIE COUNTY
Rigs
Garrison, Pgh. & W. Va. Gas Co. 2.
Britton, Carngeie Gas Co. 4.
W. Va. Tract, Whitewood Oil Co. 29.
W. Va. Tract, Romoe G. Wiles 6.
Renos, Hope C. & R. Co. 1.
Stursburg Realty Co., Astrob Oil Co. 5.
Bickle, W. H. Bickle, Jr. 5.
Swisher, Deems & Co. 1.
Barker heirs, Valley Gas Co. 1.
Wells Drilling
Wilson, Spruce O. & G. Co. 2.
Hall, Auburn Oil Co. 2.
McGill, Pgh. & W. Va. Gas Co. 1.
Bush, Ohio F. O. Co. 3.
Dotson, Nay & Kintzer 1.
Williamson, Phila. Oil Co. 1.
Boyce, Local Co. 1.
White, Maxwell & Co. 1.
Kearnes, Mellon Bros. 1.
Ingram, Fisher Oil Co. 1.
Templeton, Swingle Oil Co. 1.
Vincent, Vincent & Co. 1.
Sharp, Elder & Co. 1.
Mitchell, Rinehart Oil Co. 4.
Bradford, Rice O. & G. Co. 3.
Wrick, Wagner & Co. 2.
Maze, Amer. Dev. Co 3.
Kearns, T. A. & E. P. Mellon 1.
Lowther, Oakdale O. & G. Co. 10.
Wilson, Carnegie Gas Co. 3.
McCosh heirs, Wilson & Co. 1.
Camden, Hope Gas Co. 1.
Stanley, Hope Gas Co. 1.
GILMER COUNTY
Rigs
Tierney, Jas. Tierney 3.
Upton, Mill Fork O. & G. Co. 2.
Altop heirs, Black & Co. 4.
Stalnaker, Phila. Oil Co. 2.
Wells Drilling
Wimmiller, C. W. McCall & Co. 2.
Norris heirs, Britton Bros. 1.
Stump, Chartiers Oil Co. 2.
BRAXTON COUNTY
Rig
Howell, Pgh. & W. Va. Gas Co. 1.
Well Drilling
Bennett, Pgh. & W. Va. Gas Co. 3.
WIRT COUNTY
Wells Drilling
Roberts & Co., Federal O. & G. Co. 35.
Lemon, Victor Pet. Co. 13. 14.
WOOD COUNTY
Rigs
Ralston, E. A. Sweeny 1.
Grant, Congdon & Woodyard 12.
Marshall, Pleasant Hill Gas Co. 1.
Wells Drilling
Nelson, Park Bowser 2.
Anderson, Big Sand Oil Co. 13, 14.
Scott, So. P. O. Co. 1.
Howard, So. P. O. Co. 2.
Wharton, So. P. O. Co. 5.
Allbright, So. P. O. Co. 8.
Moore, Four S. O. & G. Co. 1.
PLEASANTS COUNTY
Rig
Gardner heirs, L. S. White 1.
Wells Drilling
Owens, Eagle Run Oil Co. 18.
Hammett, Bickel & Son 3.
Helpp, Connolly & Co. 1.
Evans, W. H. Wingrove 5.
Templeton, Ambler Oil Co. 1.
Bowie, Rinehart & Co. 1.
ROANE COUNTY
Rigs
Lark & Koontz, Green Creek O. & G. Co. 1.
Keffer heirs, G. L. Cabot 2.
Lewis, U. F. G. Co. 1.
Wells Drilling
Summers, Clifton O. & G. Co. 15.
Haynes, Chartiers Oil Co. 1.
Simmons-Depew, U. F. G. Co. 1.
Burroughs, Heck Oil Co. 4.
Conley, Heck Oil Co. 4.
M. E. Church Lot, Geary O. & G. Co. 1.
CALHOUN COUNTY
Rigs
Richards, Chemical O. & G. Co. 1.
Jarvis, G. L. Cabot 1.
Wells Drilling
Parsons, Hope C. & R. Co. 2.
Force, Kingsbury & Co. 1.
Francis-Gainer, White Pine O. & G. Co. 1.
Miller heirs, Chemical Oil Co. 3.
CLAY COUNTY
Rigs
Steckly, So. P. O. Co. 25, 33.
Parker, So. P. O. Co. 4.
Caste, Ohio F. O. Co. 14.
Caste, Virginia G. & O. Co. 14.
Brown, Swan & Co., Virginia G. & O. Co. 17.
Brown, Swan & Co., Virginia G. & O. Co. 3.
Brown, Swan & Co., Virginia G. & O. Co. 3.
Brown, Swan & Co., Virginia G. & O. Co. 1.
Lockhart, Virginia G. & O. Co. 3.
Wells Drilling
Stockly, So. P. O. Co. 34, 36, 37, 39, 40.
Parker, So. P. O. Co. 3.
Hicks, So. P. O. Co. 1.
B. S. G. & G., Virginia G. & O. Co. 15.
B. G. S. & O., Virginia G. & O. Co. 3.
Lockhart, Virginia G. & O. Co. 2.
UPSHUR COUNTY
Williams, Hughes O. & G. Co. 1.
McQuain, Carnegie Gas Co. 1.
Racing, Carnegie Gas Co. 1.
TAYLOR COUNTY
Well Drilling
Morrow, McGrady & Co. 1.
LINCOLN COUNTY
Rig
Norse Creek C. & M. Co., U. F. G. Co. 4.
Wells Drilling
Sias, Roy & McComas 2.
Norse Creek C. & M. Co., U. F. G. Co. 2, 3.
Brewer, So. P. O. Co. 2.
Breadlove, Roy & Osborne 1.
Cooper heirs, Union O. & G. Co. 2.
KANAWHA COUNTY
Rig
White, Snyder & Co. 1.
Wells Drilling
Wood, U. F. G. Co. 1.
Mullen, U. F. G. Co. 1.
Shamblin, U. F. G. Co. 1.
Smith heirs, U. F. G. Co. 1.
Towney, U. F. G. Co. 1.
Towney, U. F. G. Co. 1.
Miles, Tampico Oil Co. 1.
BOONE COUNTY
Wells Drilling
Williams Coal Co., Pure Oil Co. 229.
L. R. & P. Tract, Pure Oil Co. 22.
Williams Coal Co., Pure Oil Co. 228.
Anderson, Owens B. & M. Co. 1.
Linville, Owens B. & M. Co. 2.
Peytonian C. & L. Co., Owens B. & M. Co. 10.
White-Hopkins, Halstead & Co. 1.
LOGAN COUNTY
Wells Drilling
Pigeon Run C. Co., Occotock O. & G. Co. 14.
Yawkey-Freeman C. Co., Wocotock O. & G. Co. 2.
Bone, Pure Oil Co. 1.
Cole-Crane, Hope Gas Co. 3.
Cole-Crane, Zonhleimer & Gibbs 1.
PUTNAM COUNTY
Wells Drilling
Marcum, Kirtley & Koller 1.
CABELL COUNTY
Wells Drilling
Walker, Aetna O. & G. Co. 1.
Beckett, Harshbarger O. & G. Co. 10.
Findley, Monckel Gas Co. 1.
Chambers, Chambers O. & G. Co. 1.
Wetherholt, Farr & Figley 1.
Browning, Grant Gas Co. 1.
MINGO COUNTY
Wells Drilling
Red Jacket C. Co., Red Jacket C. Co. 1.
Logan Cannel C. Co., Old Colony Oil Co. 19.
Closterman Est., Old Colony Oil Co. 12.
WAYNE COUNTY
Wells Drilling
Colwell, Old Colony Oil Co. 2.
Barton, Chartiers Oil Co. 2.
Rigs, 55; wells drilling, 149; total, 204.

SOUTHWEST PENNSYLVANIA
WASHINGTON COUNTY
Wells Completed

Shaffer, Dollmier & Co. 1	dry
Dowler, Peoples Gas Co. 1	dry
Pgh. Coal Co., Stock Co. 1	dry
Martin, Robertson & Co. 1	5
Weir, Dunn & Co. 5	100

ALLEGHENY COUNTY

Mohn, Altoona O. & G. Co. 3	2
Link, Link O. & G. Co. 1	gas
Thornburg, J. McDermott 1	gas
Elliott, Marshall & Co. 2	1
Sarver, Smith & Co. 2	gas

BEAVER COUNTY

Miller, Ralph, Steel 1	gas
Tuttle, Samuel Reed & Co. 1	3
Washington, Bruin Producing Co. 2	dry

GREENE COUNTY

Lemley, Peoples Gas Co. 1	gas
Wade, Carnegie Gas Co. 2	8
Lantz hrs., Carnegie Gas Co. 1	dry
Williamson, Phila. Gas Co. 1	gas
Henderson, Federated O. & G. Co. 1	dry
Williamson, George Vance 1	dry
J. L. Garard, J. L. Garard 5	4
Clovis hrs., Mfrs. L. & H. Co. 4	gas
Smith, J. & Edly & Co. 1	dry
Main, Cobert Bros.	gas
Wegster, N. G. Co. of W. Va. 1	dry
Smith, N. G. Co. of W. Va. 1	30
Chess, McCracken & Co. 1	gas
Berdine, Dunn Mar. O. & G. Co. 3	gas
Moore, Phila. Gas Co. 1	dry
Graham, Phila. Gas Co. 2	gas
Tripp, L. Black & Co. 2	dry

Wells completed	30
Production	122
Dry	11
Gas	11

WASHINGTON COUNTY
Rigs
Rankin, Dallmyer & Co. 1.
Krickmyer, Book & Thomas 3.
Wells Drilling
Weir, Carnegie Gas Co. 1.
Taylor, Carnegie Gas Co .1.
Rankin hrs., Dalmyer 1.
ALLEGHENY COUNTY
Rigs
Fisher, Harbison & Co. 1.
BEAVER COUNTY
Wells Drilling
Richards, L. A. Reed & Co. 1.
GREENE COUNTY
Rigs
Hadlee, So. P. O. Co. 3.
Long, Carnegie Gas Co. 1.
Pethtel, Carnegie Gas Co. 1.
J. L. Garard, J. L. Garard 6.
Fordyce, Clovis & Co. 1.
Eakin, Mfrs. L. & H. Co. 3.
Cummins, Peoples Gas Co. 1.
Eddy, So. P. O. Co. 3.
Caseman, Caseman O. & G. Co. 1.
Powers, Consumers Fuel Co. 1.
Rutan, Consumers Fuel Co. 5.
Moniger, Neel O. & G. Co. 1.
Wells Drilling
Neill, Carnegie Gas Co. 1.
H. Lemley, Carnegie Gas Co. 2.
Kiger, Carnegie Gas Co. 1.
Cumberland Coal Co., Carnegie Gas Co. 1.
Johns, Phila. Gas Co. 1.
Fox, Phila. Gas Co. 1.
Dunkard O. & G. Co., George Vance 1.
Williamson, George Vance 1.
L. Lemley, Martin O. & G. Co. 1.
Clovis, Roy Clovis & Co. 2.
Hagen, McCracken & Co. 1.
Parson, Carnegie Gas Co. 2.
Evans, Mfrs. L. & H. Co. 1.
Earnest, Mfrs. L. & H. Co. 1.
Estel, Conert Bros. & Co. 1.
Huffman, Phila. Gas Co. 2.
Jacobs & Co., Phila. Gas Co. 7.
Walters, Mfrs. L. & H. Co. 1.
Cooper, Mfrs. L. & H. Co. 2.
Anderson, Consumers Fuel Co. 3, 4.
J. S. Rutan, Consumers Fuel Co. 2.
Shape, Carnegie Gas Co. 1.
Reese, Carnegie Gas Co. 1.
J. S. Rutan, Carnegie Gas Co. 3, 4.
Tripp, Carnegie Gas Co. 1.
Baldwin, Carnegie Gas Co. 1.
T. F. Rutan, Gas Co. of W. Va. 5, 6, 7.
Reese, Elliott Moore Co. 1.
Headley, Greensboro Gas Co. 1.
Brooks, Raymond Oil Co. 8.
Rigs, 16; wells drilling, 39; total, 55.

SOUTHEASTERN OHIO
Wells Completed
Monroe County—

Buchannan, C. S. McClure 1	1
Scott, J. C. Carner & Co. 5	2
Kinsey, Stewart & Co. 6	dry

Perry County—

Roberts, Keller Bros. 25	dry
Sunday Creek C. Co., Sunday Creek C. Co. 138	202

Hocking County—

Noble, Gordon Oil Co. 3	55
Brimner, Gordon Oil Co. 3	8
Thrush, Cline, Vensel & Co. 2	15
Wyskiver, Preston Oil Co. 2	12
Funk, Calico Ridge O. & G. Co. 1	5
Poston, Ohio F. S. Co. 1	dry
Linton, Preston Oil Co. 1	45
Guess, Duncan & Co. 4	gas
Marlow O. & G. Co., Griffin Pros. Co. 5.	45
Arnold, Ark. Fuel Oil Co. 12	gas
Hite, Graham & Co. 8	dry
Hall, Ozark O. & G. Co. 1	5

Holmes County—

Cullens, Kenrow Co. 1	10
Hastings, East Ohio Gas Co. 2	50
Marquis, Pure Oil Co. 3	40
Purdy, Pure Oil Co. 1	5
Miller, Ark. Fuel O. Co. 3	25
Shankland, Ohio Fuel G. Co. 1	gas
Findley, Empire G. & F. Co. 1	dry
Close, Empire G. & F. Co. 3	30
W. Close, Pure Oil Co. 3	25

Guernsey County—

Mehaffy, Ohio Fuel Gas Co. 1	gas
Ford, Ohio Fuel Gas Co. 1	gas
O'Brien, Ohio Fuel Gas Co. 1	gas
Sumafrank, Ohio Fuel Gas Co. 1	gas
Turner, Ohio Fuel Gas Co. 1	gas
C. E. P. Co. Ohio Fuel Gas Co. 1	gas
Ruby, Ohio Oil Co. 2	gas
Oliver, Ohio Oil Co. 2	gas
Caldwell, Whitmer Est. 1	dry
Irwin, Pure Oil Co. 2	dry
Watson, C. O. Watson 2	gas
Fulton, Stoltz & Co. 1	dry
McCloy, Keith & Co. 1	gas
Erskin, Miller & Moore 1	dry
Linton, Linton & Co. 1	dry

Licking County—

Mead-Mayberry, Mead & Co. 1	8
Seward, Pure Oil Co. 5	60
Montgomery, Ark. Fuel Oil Co. 4	5
Swingard, E. H. Everett Co. 2	40
Walcott, E. H. Everett Co. 2	3
Forry, Ohio F. S. Co. 9	2
Forry, Ohio F. S. Co. 9	2
Harsbarger, Ohio F. S. Co. 5	5
McKinney, Rugg & Co. 10	15
McKinney, Ohio F. S. Co. 9	dry
Weiss, Denbow & Co. 8	2
Weiss, Denbow & Co. 9	2
McKinney, North Fork O. Co. 30	10
Brown, H. A. Nolan 1	8
VanWinkle, Goshen Oil Co. 4	2
Chaney, Guy Shafer 1	7
Hoover Bros. Leonard O. & G. Co. 3	1
Ramsey, Ohio F. S. Co. 1	gas
Chaney, Guy Shafer 2	6
Hoover Bros., Leonard O. & G. Co. 4	6
Miser, Pure Oil Co. 1	40
Tavener, Weidman & Co. 5	3
Wolfe, Moore & Adams 4	2
Burns, W. W. & BT. Wehrle 2	gas
Crawmer, Planet Oil Co. 4	8
Michael, Pure Oil Co. 3	110

Fairfield County—

Shaw, Hufford & Co. 1	dry

Muskingum County—

Michael, Heisey & Co. 2	110
Rusk, J. W. Rush 1	1
Irwin, Pure Oil Co. 1	dry

Coshocton County—

Ashcraft, Leonard O. & G. Co. 6	10
Howell, Ark. Fuel Oil Co. 1	30
Mossholder, Murphy Oil Co. 3	125
Mizer, Pure Oil Co. 1	40
Hall, Ark. Fuel O. Co. 3	6
Hardesty, Ark. Fuel O. Co. 5	4

Knox County—

Burkholder, Roy Decker & Co. 1	1

Morgan County—

Longstreth, Sun Oil Co. 6	gas
Kirkwood, Sun Oil Co. 2	5
Eppley, Pure Oil Co. 12	12
Hughes, Pure Oil Co. 8	10
Fye, Pure Oil Co. 12	10
Smith, Pure Oil Co. 9	10
McCarty, Polston & Maynard 15	20
Schofield, Metcalf & Co. 20	dry
Edgerton, Oil City Trust Co. 13	dry
McGrew, Bowman O. & G. Co. 1	gas
Lovell, Glazier & Co. 9	1
Williams, Pure Oil Co. 21	10
Bailey, Hope C. & R. Co. 1	gas

Vinton County—

Stanley, Bell & Shaw 1	6
Clark, Campbell & Co. 1	gas
Athens County—	
Moore, Sherman & Co. 1	dry
State of Ohio, Athens State O. Co. 1	3
Cordray, Cook & Co. 1	dry
Lash, Clark & Co. 1	gas
White, Clark & Co. 1	dry
Walker, Cook & Co. 1	1
Noble County—	
Bettinger, Speary & Speary 4	5
Meigs County—	
Van Meter, Meigs-Summer O. & G. Co. 1	dry
Yost hrs. Pure Oil Co. 5	16
Capehart, Lebow & Co. 2	3
Burdette, Coal Hollow O. & G. Co. 1	4
Washington County—	
Little, G. W. Kesselring 20	5
Good, Good & Co. 1	5
Webber, Reno Oil Co. 1	gas
Williams, Carner & Co. 1	dry
Pfaff, Bank of Lowell 17	2
Wharton hrs. Ward & Co. 1	1
Wharton hrs. Ward & Co. 2	1
Harrison County—	
Heavlin, Quinn & Co. 6	2
Belmont County—	
Bumgardner, N. G. Co. of W. Va. 3	10
Ferguson, N. G. Co. of W. Va. 4	dry
Shephard, Cowell & Co. 3	8
Jefferson County—	
Criswell, Needles & Co. 1	3
McCullogh Bros. Featner & Co. 5	15
Jefferson County—	
Brady, Turner & Co. 9	1
Hoffman hrs. McLaughlin & Co. 4	2
Davidson, J. N. Davidson 7	2

Wells completed	120
Production	1492
Dry	21
Gas	21

MONROE COUNTY
Rigs
Bruce, Stoffle & Co.1.
PERRY COUNTY
Rigs
Dittoe, Planet Oil Co. 5.
McCullough, Hope C. & R. Co. 17.
Ardray, Mideast Oil Co. 5.
Cookson, Ralph Bros. Inc. 2.
Bennett, Nash & Co. 1.
Norger, Wehrle & Daley 1.
Pettit, Gargenhein & Leveson 1
Wells Drilling
Adcock, Pure Oil Co. 1.
Stiles, Stiltz O. & G. Co. 1.
Christ, Ohio F. S. Co. 1.
Molick Bros., Atha Oil Co. 21.
Donahue, Marshall Marshall 32.
Driggs, Leonard O. & G. Co. 1.
Togue hrs., Pure Oil Co. 1.
Golf, Wallsmith & Co. 1.
Fitch, Leonard O. & G. Co. 1.
HOCKING COUNTY
Rigs
Woodruff hrs., Adair & Stur 1.
Marlow O. & G. Co., Griffin Prod. Co. 6.
Tucker, Griffin Prod. Co. 1.
Bowlby, Cowen & Co. 1.
Elder, Elder Oil Co. 1.
Wells Drilling
Stone, Gordon Oil Co. 5.
Thrush, Rauber O. & G. Co. 2.
Hogen-Murphy, Kachelmacher Est 1.
Barthlow, Consolidated O. Co. 1.
Robey, Jewell O. & G. Co. 1.
Mowery, Maysville O. & G. Co. 2, 3.
Laslie, Pure Oil Co. 2.
Mite & Co., Graham & Co. 9.
M. V. P. Co., Chartiers Oil Co. 201, 202.
Cobb-Bradley, Squire & Co. 12.
Dawley hrs., Bell & Shaw 1.
Chapman, Gordon Oil Co. 1.
Skinner, Kingstone Oil Co. 1.
HOLMES COUNTY
Rigs
Sowash, East Ohio Gas Co. 1.
Miller, Pure Oil Co. 3, 4.
Purdy, East Ohio Gas Co. 1.
Bilderbeck, Empire G. & F. Co. 1.
Schuler, Palmer & Co. 1.
Wells Drilling
Schuler, Burtner & Co. 1.
Miller, East Ohio Gas Co. 2.
Allison, East Ohio Gas Co. 1.
Gross, East Ohio Gas Co. 1.
Smith, Pure Oil Co. 2.
Snyder, Pure Oil Co. 2.
Bricker, Kemrow Co. 1.
Mohr, East Ohio Gas Co. 1.
Allison, East Ohio Gas Co. 1.
Patterson, Leonard O. & G. Co. 1.
Reed, Reed & Co. 1.
Allison, Ohio F. G. Co. 1.
Smitheiser, Ohio Oil Co. 3.
Netherow, Empire G. & F. Co. 3.
Donald, Empire G. & F. Co. 2.
Close, Pure Oil Co. 4, 5.
LICKING COUNTY
Rigs
Stitt, M. F. Whitehill & Co. 7.
McKinney, North Fork O. Co. 31.
Claypool, Everett Co. 2.
Wells Drilling
Phillips, Hope C. & R. Co. 4.
McKee, E. H. Everett Co. 2.
Crawford, Whitehill & Co. 3.
Osborne, Ohio F. S. Co. 1.
Ferry, Ohio F. S. Co. 10, 11.
Harshbarger, Ohio F .S. Co. 6.
Moran, Leonard O. & G. Co. 3.
Nolan, S. C. Brown 2.
Van Winkle, Goshen Oil Co. 3.
Chaney, Guy Shafer 3.
Orr, Hazlett & Co. 7.
Gutridge, Bishop, Hazlett & Co. 5.
Vandenbark, Hope C. & R. Co. 14.
Uffner, Hope C. & R. Co. 2.
Orr, Pure Oil Co. 1.
Drumm, Pure Oil Co. 1.
MUSKINGUM COUNTY
Wells Drilling
Varner, Hope C. & R. Co. 1.
Moyer, Whithill & Co. 3.
Varner, Ohio F. S. Co. 1.
Coome, Pure Oil Co. 2.
Denny, Midland Oil Co. 1.
Ashcraft, Pure Oil Co. 5.
Burton, Miller & Co. 1.
COSHOCTON COUNTY
Rigs
McKee, Spindler, Donan & Co. 4.
McKinley, Ohio Oil Co. 1.
Van Winkle, Preston Oil Co. 3.
Dugan, Ark. F. O. Co. 18.
KNOX COUNTY
Rigs
McMann, East Ohio Gas Co. 1.
Cooper, Preston Oil Co. 1.
Colopy, Upham Gas Co. 1.
Burkholder, R. Decker & Co. 2.
Wells Drilling
Honton, Pure Oil Co. 3.
Strouse, East Ohio Gas Co. 1.
Hayes, Weidman & Co. 1.

MORGAN COUNTY
Rigs
Smith, Pure Oil Co. 10.
Wells Drilling
Hughes, Pure Oil Co. 9.
Benjamin, Swissville O. & G. Co. 1.
Edgerton, Oil City Trust Co. 14.
Joy, Bowman O. & G. Co. 1.
Lovell, Glazier & Co. 10.
Williams, Pure Oil Co. 7.
Fye, Pure Oil Co. 1.
Nicewarner, Pure Oil Co. 5.
Bush, Pure Oil Co. 5.

NOBLE COUNTY
Wells Drilling
Walburn, Gordon Oil Co. 1.
Dearth, Beegley & Shafer 1.
Beckley, Cooperative Oil Co. 1.

GUERNSEY COUNTY
Rigs
Hill, Ohio F. G. Co. 1.
Haught, Ohio F. G. Co. 1.
Oliver, Ohio Oil Co. 2.
Booth, Logan Gas Co. 1.
McBride, Wilmer Est. 2.
Anker, Jewett & Co. 2.
Craig, O. F. G. Co. 1.
Enga, O. F. G. Co. 1.
Stone, O. F. G. Co. 1.
Hamond, O. F. G. Co. 1.
Young, Pure Oil Co. 1.
Ringer, Pure Oil Co. 1.
White, Leonard O. & G. Co. 2.
Michael, Withmer Est. 1.
Wells Drilling
Schriver, Ohio F. G. Co. 1.
McWilliams, Ohio F. G. Co. 2.
Nyce, Ohio F. G. Co. 1.
Taylor, Ohio F. G. Co. 1.
Lowery, Ohio F. G. Co. 1.
Driggs, Ohio F. G. Co. 1.
Gravis, Ohio F. G. Co. 1.
Crossly, Ohio F. G. Co. 1.
Simons, Ohio F. G. Co. 1.
Milligan, Ohio F. G. Co. 1.
Anderson, Ohio F. G. Co. 1.
Hawes, Ohio F. G. Co. 1.
Oliver, Ohio Oil Co. 1.
Wyncarver, Ohio Oil Co. 1.
W. B. Oliver, Logan Gas Co. 2.
Booth, Logan Gas Co. 1.
Morrison, Withmer Est. 3.
Broom, Cambridge Gas Co. 1.
Anker, Cambridge Gas Co. 1.
Brill, Cambridge Gas Co. 1.
A. C. Oliver, Ohio F. G. Co .1.
F. C. Anderson, Ohio F. G. Co. 1.
Mahaffey, Ohio F. G. Co. 2.
Hall, Ohio F. S. Co. 1.
Ringer, Pure Oil Co. 1.
Clark, Pure Oil Co. 1.
Gill, Pollock Est. 1.
McFadden, Harold Pasco 1.
Broom, McCullum & Blackston 1.
Stephens, Dare & Co. 1.
Bales, Bales & Co. 1.

ATHENS COUNTY
Wells Drilling
Blackwood, Nezum & Co. 1.
Haught, Ark. F. O. Co. 1.
Wilkes, Atheon Oil Co. 3.
Wood, Ronshausen & Co. 6.
Dana, Clark & Co. 1.

NOBLE COUNTY
Rigs
Harper, Michael & Co. 7.
Wells Drilling
Williams, Nerds O. & G. Co. 4.
Hill, Harper & Co. 1.
Davis, Davis Bros. 1.
Radcliff, Young & Co. 1.
Shafer, Wickens & Co. 1.
Keifer hrs, Ohio F. S. Co. 1.
Brotton, Salling & Co. 2.

MEIGS COUNTY
Rigs
Yost hrs., Pure Oil Co. 6.
Salser, Ohio F. S. Co. 2.
Wells Drilling
Holter & Co., Lebow & Co. 4.

WASHINGTON COUNTY
Rigs
Bates, Johnson & Co. 1.
Wells Drilling
Stephan, Henderson Oil Co. 55.
Reynolds, Wright & Co. 1.
Robeson, Anderson & Co. 3.
Noland, Herlan & Co. 1.
Bennett, Sheets Run Oil Co. 2.
Williams, Carner & Co. 2.
Pfaff, First Nat'l Bank 18.
Kupp, Jerry Buckley 1.

BELMONT COUNTY
Wells Drilling
Ferguson & Co. N. G. Co. of W. Va. 5.
Heisley, Marshall Co. 1.

JEFFERSON COUNTY
Wells Drilling
Torence heirs, Brown & Co. 1.

CARROLL COUNTY
Well Drilling
Harrington, N. G. Co. of W. Va. 2.
Rigs, 49; wells drilling, 136; total, 185.

CENTRAL OHIO

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Knox	1	0	0	0	1	8	9
Ashland	7	0	0	7	11	14	25
Medina	4	51	0	2	1	10	11
Lorain	2	0	2	0	0	1	1
Wayne	6	0	2	4	0	13	13
Holmes	7	257	1	1	5	19	24
Athens	8	0	3	1	1	12	13
Coshocton	4	373	0	1	1	4	5
Cuyahoga	7	0	1	6	0	14	14
Vinton	2	5	0	1	0	4	4
Jackson	0	0	0	0	0	1	1
Summitt	0	0	0	0	0	1	1
Total Sept.	43	686	8	23	20	101	121
Total Aug.	54	300	16	29	24	97	121
Difference	11	386	8	6	4	4	0

WELLS COMPLETED

KNOX COUNTY
Clay—L. M. Divan, Roy Decker 1 2
ASHLAND COUNTY
Orange—Wm. Frizzle, Logan Gas 1 .. gas
Hanover—Frank Firestone, Logan gas 2 gas
Green—W. C. Workman, Logan Gas 1. gas
Sanitary Prod., Wiser Oil 1 ..... gas
Sullivan—Lee Burkhart, Logan Gas 1 . gas
S. C. Baldorf, Ohio Fuel Gas 1 ..... gas
J. A. Spencer, Klise-Eckstein-McCann 2 . . . . . gas
Wells completed 7
Gas 7

MEDINA COUNTY
Liverpool—N. A. Granson, Logan Gas 2 gas
Brunswick—D. J. Hitchcock, Ohio Fuel Gas 1 . . . . . gas
Chatham—C. G. Packard, E. R. Edson Son Co. 25 1
L. A. Severcool, Ohio Fuel Supply 1 . 50
Wells completed 4
Oil wells 2
Production, oil 51
Gas 2

LORAIN COUNTY
Columbia—Wm. Rundel, Logan Gas 2 . dry
Robt. Squires, Ohio Fuel Gas 1 ..... dry
Wells completed 2
Dry 2

WAYNE COUNTY
Paint—J. M. Westcott, Ohio Fuel Gas 1 gas
Plain—J. G. Yocum, East Ohio Gas 4 .. gas
Milton—B. Mibach, East Ohio Gas 1 .. dry
Congress—E. K. Weltman, Logan Gas 1 dry
Lowery, Johnson, Ohio Fuel Gas 1 .. gas
Eliza A. Ginter, Arco Oil 1 ..... gas
Wells completed 6
Dry 2
Gas 4

HOLMES COUNTY
Monroe—John Shanklin, Ohio Fuel Gas 1 . . . . . gas
Gladys Purdy, Pure Oil 1 30
Hardy—J. R. Hastings, East Ohio Gas 2 152
Mary A. Findlay, Empire G. & F. 1 . dry
Jease P. Close, Empire G. & F. 3 .. 30
Caroline Cullen, Klise-Eckstein-McCann 1 10
Prairie—Lee Durbin, Pure Oil 3 35
Wells completed 7
Oil wells 5
Production, oil 257
Dry 1
Gas 1

ATHENS COUNTY
Carthage—Myrtle Runyon, Logan Gas 1 dry
Isaac Ball, Logan Gas 1 ..... dry
Hannah McCall, C. A. Cody & Co. 1 . gas
Wells completed 2
Dry 2
Gas 1

COSHOCTON COUNTY
Newcastle—Cassingham, Cassingham & Bell Bros. 16 . . . . . gas
Perry—E. & O. Van Winkle, Logan Gas 3 150
Mossholder, Murphy & Co. 3 191
E. C. Howell, Arkansas Fuel Oil 1 .. 32
Wells completed 4
Oil wells 3
Production, oil 373
Gas 1

CUYAHOGA COUNTY
Dover—Nellie E. Hodge, Hulse & Kundtz 2 . . . . . gas
James Jenkins, Hulse & Kundtz 1 ... gas
J. A. Hoover, Arthur & Simpson 1 ... gas
C. & M. King, Arthur & Simpson 1 .. gas
E. Rice, Ohio Pipe & Supply 1 ..... gas
Strongville—Grieb, Dillon & McFrederick Bros. 1 . . . . . gas
S. M. Spedy, Dillon & McFrederick Bros. 1 . . . . . dry
Wells completed 7
Dry 1
Gas 6

VINTON COUNTY
Knox—J. W. Stanley, Stanley Oil 1 ... 5
Cameron S. Clark, Cameron & Co. 1. gas
Wells completed 2
Oil wells 1
Production, oil 5
Gas 1

KNOX COUNTY
Rig
Union—K. Neff, East Ohio Gas 2.
Wells Drilling
Jefferson—Peter Kaufman, East Ohio Gas 1.
Cal. Stout, East Ohio Gas 1.
J. M. Miller, Ohio Fuel Gas 1.
Thos. McMahon, Ohio Fuel Gas 1.
Jos. Colopy heirs, Upham Gas 1.
Brown—J. J. & S. M. Hair, Upham Gas 1.
Geo. Lifer, Upham Gas 1.
Morgan—Jacob Hays, Wiedeman & Co. 1.
Rig, 1; wells drilling, 8; total, 9.

ASHLAND COUNTY
Rigs
Hanover—L. S. Siddle, Logan Gas 1.
B. M. Mavis, Logan Gas 1.
Chas. Van Scoder, Logan Gas 1.
H. Bookman, East Ohio Gas 2.
Green—W. A. Rowe, Logan Gas 1.
Sullivan—D. E. Spencer, Ohio Fuel Gas 1.
L. B. & Evan F. Stine, Ohio Fuel Gas 1.
Anna M. Pence, Ohio Fuel Supply 1.
L. & G. Burkhart, Logan Gas 2.
Clear Creek—R. N. Shaw, Logan Gas 1.
Miflin—Martha King, Geiger & Barnhart 1.
Wells Drilling
Orange—P. M. Fluke, Logan Gas 1.
Wm. H. Brandt, Logan Gas 2.
J. Henry Bushman, Ohio Fuel Gas 1.
L. M. Helbert, Ohio Fuel Gas 2.
Hanover—Mary Krumpt, Ohio Fuel Gas 1.
Thos. Miller, Ohio Fuel Gas 1.
M. C. Leatherow, Ohio Fuel Gas 2.
J. H. Miller, East Ohio Gas 2.
Lake—John Moores, Logan Gas 1.
Green—Wiley Johnson, Logan Gas 1.
J. F. Jones, Ohio Fuel Gas 2.
Sullivan—John J. Smith, Logan Gas 1.
Troy—Ray Arnold, Hulse & Kundtz 1.
W. Frizzle, Logan Gas 1.
Rigs, 11; wells drilling, 14; total, 25.

MEDINA COUNTY
Rig
Liverpool—L. Hance, Logan Gas 1.
Wells Drilling
Litchfield—Geo. Kennedy, Globe O. & G. 1
Leland R. Seeley, Logan Gas 9.
Lafayette—H. S. Koppes, Ohio Fuel Gas 1
Liverpool—Jos. Walters, Logan Gas 1.
Geo. Stroskopt, Ohio Fuel Gas 2.
Phoebe Stroskopt, East Ohio Gas 3.
Chas. Kinzey, Empire G. & F. 1.
Westfield—O. E. Daniels, Logan Gas 1.
Spencer—Harvey Mantz, Logan Gas 1.
Granger—Thos. Sylvester, Empire G. & F. 1.
Rig, 1; wells drilling, 10; total, 11.

LORAIN COUNTY
Well Drilling
Columbia—F. Adams, Chemical O. & G. 3

WAYNE COUNTY
Wells Drilling
Wooster—John M. Carroll, Ohio Oil 4
Albert Berger, Ohio Oil 1.
Green—C. S. & C. A. Eby, W. E. Hawk & Co. 2.
East Union—M. Lautenschlager, Logan Gas 1.
Plain—J. G. Yocum, East Ohio Gas 5.
Milton—A. & E. Bodager, East Ohio Gas 1.
Congress—H. B. Holmes, Logan Gas 1.
O. E. Frank, Logan Gas 4.
Barton Ginter, Warren Palmer & Co. 3.
C. W. & A. Keener, Glen Harmon & Co. 1.
Cannan—Daniel Wiles, Butler Bros. 4.
Chester—D. Hoenshil, Logan Gas 1.
Baughman—Lydia C. Garber, Logan Gas 1.
Wells drilling, 13.

HOLMES COUNTY
Rigs
Hardy—L. & W. G. Bilderbach, Empire G. & F. 1.
Virginia Tidball, Klise-Eckstein-McCann 1.
Prairie—Margaret Miller, Pure Oil 3.
Paint—E. E. Troyer, Logan Gas 1.
Kilbuck—Chas. Allison, East Ohio Gas 1.
Wells Drilling
Monroe—Wm. Miller, Arkansas Fuel Oil 3.
Ollie M. Smithieler, Ohio Oil 3.
Hardy—Warren R. Close, Pure Oil 4.
Bernice Allison, East Ohio Gas 1.
C. D. & Viola Groffe, East Ohio Gas 1
J. E. & M. Miller, East Ohio Gas 2.
Delpha Nethrow, Empire G. & F. 3.
Lewis Donald, Empire G. & F. 2.
Salt Creek—Adam Karch, Empire G. & F. 1
Prairie—Isaac F. Snyder, Pure Oil 2.
Margaret Miller, Pure Oil 2.
L. A. Sowash, East Ohio Gas 4.
Paint—Isaac Y. Miller, Ohio Fuel Gas 2.
Emmanuel B. Weaver, Logan Gas 1.
Kilbuck—W. H. Mohr, East Ohio Gas 1.
Alfred & Ella Mohr, East Ohio Gas 1.
C. P. Allison, Ohio Fuel Gas 1.
Richland—Geo. L. Strouse, East Ohio Gas 1.
Rose Bricker, Klise-Eckstein-McCann 1.
Rigs, 5; wells drilling, 19; total, 24.

ATHENS COUNTY
Rig
Carthage—B. W. Barnhaill, Logan Gas 1.
Wells Drilling
Carthage—W. O. & Mary Stout, Logan Gas 3.
J. E. Bailey, Joy O. & G. 9.
G. E. Bradford, Goddard & Cunningham 1.
Oliver Davis, Hawkins & Co. 1.
J. L. Yarner, Fairfield Gas 1.
Edward Burke, C. W. Nuzum 2.
Eliza Dunlavet, Ohio Fuel Gas 1.
Marguret Rowan, E. A. Sweeney & Co. 2.
Daniel Ackerly, E. A. Sweeney & Co. 2.
S. S. Huffman, Ohio Fuel Supply 1.
Waterloo—Lafayette Hewitt, Guenther & Co. 2.
M. G. Wood, Arkansas Fuel Oil 1.
Rig, 1; wells drilling, 12; total, 13.

COSHOCTON COUNTY
Rig
Linton—Cliff McFarland, Ohio Fuel Supply 1.
Wells Drilling
Tiverton—W. S. & Sarah Cooper, Logan Gas 1.
Newcastle—Cassingham, Cassingham & Bell Bros. 17.
Perry—W. D. Mossholder, Murphy & Co. 4.
Monroe—Robt. L. McKelvey, Ohio Oil 1.
Rig, 1; wells drilling, 4; total, 5.

CUYAHOGA COUNTY
Wells Drilling
Dover—M. Souleck, Wiser Oil 1.
G. T. Promrett, Wiser Oil 2, 3.
G. W. Jenkins, Wiser Oil 1.
J. Jenkins, Arthur & Simpson 1.
H. Martin, Arthur & Simpson 1.
A. S. Knowles, Arthur & Simpson 1.
H. F. Eyring, Dempsey Bros. 1.
L. M. Coe, Dempsey Bros. 1.
P. Hough, McGrath & Co. 1.
G. Dunford, Logan Gas 1.
A. Dunford, Logan Gas 1.
N. H. Austin, Hulse & Kundtz 1.
J. Jenkins, Hulse & Kundtz 1.
Wells drilling, 14.

VINTON COUNTY
Wells Drilling
Knox—Frank Martin, B. Henry & Co. 2.
Geo. C. Davis, John DeLong & Co. 1.
Wesley Washburn, Gordon Oil 2.
Wm. Dearth, Beagley & Shaffer 2.
Wells drilling, 4.

JACKSON COUNTY
Well Drilling
Franklin—W. L. Kinnison, Logan Gas 2.

SUMMITT COUNTY
Well Drilling
Richfield—Ella J. Mayer, Hulse & Kundtz 1.

LIMA FIELD

Summary of Field Operations

	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Wood	10	250	1	0	9	9
Hancock	8	241	0	0	10	10
Allen	2	25	0	0	4	4
Auglaize	1	30	0	0	4	4
Sandusky	6	46	0	0	4	4
Mercer	5	54	0	0	3	3
Van Wert	0	0	0	0	1	1
Seneca	0	0	0	0	1	1
Lucas	3	26	0	0	3	3
Ottawa	4	43	0	0	2	2
Shelby	2	44	0	0	4	4
Hardin	3	55	0	0	2	2
Darke	3	8	0	0	5	5
Paulding	0	0	0	2	0	2
Wyandot	1	25	0	0	0	0
Clark	0	0	0	0	1	1
Lima	48	847	1	2	53	55
Michigan	10	158	1	0	47	47
Total Sept.	58	1,005	2	2	100	102
Total Aug.	49	549	4	15	81	96
Difference	9	456	2	13	19	6

WELLS COMPLETED

WOOD COUNTY
Montgomery—F. E. Palmer, Ohio Oil 6 abd
Pear A. M. Stahl, Knisely & Bonawit 8 . . . . . abd
F. J. & V. H. Miller, Thomas Painter Estate & Co. 7 . . . . . abd
Bloom—R. A. Hughes, Helena L. Hughes 4 75
Frank Slauterbeck, Ohio Oil 49 45
Plain—Thos. Rutter, Ohio Oil 3 ..... abd
Portage—C. L. Sines, Wayne Oil 7 35
Liberty—John Johnson, Ohio Oil 16, 28 abd
Emila Spooner, Ohio Oil 28 ..... abd
Perrysburg—Geo. Deverna, Oko O. & G. 7 42
Geo. Deverna, Oko O. & G. 8 16
Wm. Budd, Oko O. & G. 5 25
J. J. Hellman, Oko O. & G. 4 5
Chas. Thaiss, Jr., Oko O. & G. 4 6
C. Voland, Oko O. & G. 1 ..... dry
Lake—H. C. Michelson, Lants, Schulte & Co. 3 1
J. A. Miller, Ohio Oil 1 ..... abd
Wells completed 10
Production 250
Dry 1
Abandoned 8

HANCOCK COUNTY
Liberty—W. H. Fountain, J. T. Montgomery 24 26
A. Schoonover, Harpst Bros. 3 20
Joe Ernst, Keiser Oil 2 5
Portage—Minerva Overholt, Ohio Oil 6 16
Eagle—Frank Freed, R. T. Rittenhouse 5 10
M. H. Deeds, J. M. Steen & Co. 25 .. 25
Marion—Elmer Spahr, Denhoff Bros. 5 5
Biglick—C. S. Chambers, Ridge O. & G. Synd. 3 140
Wells completed 8
Production 241

ALLEN COUNTY
Bath—P. D. Driver, O. T. Botkins & Co. 5 10
John W. Fetter, C. C. Apple 12 15
Wells completed 2
Production 25

AUGLAIZE COUNTY
Jackson—Clem Enneking, Rock Oil 2 .. 30
St. Marys—Emily P. LeBlond, Ohio Oil 17 . . . . . abd
Wells completed 1
Production 30
Abandoned 1

SANDUSKY COUNTY
Washington—A. E. Waggoner, W. C. Richards & Co. 5 7
Jackson—Martha A. Talbert, Haubert & Talbert 8 20
Martha A. Talbert, Haubert & Talbert 9 3
S. M. Klotz, Home Banking 6 5
Frank J. Wammes, Jos. A. Nelset & Co. 3 2
Frank J. Wammes, Jos. A. Nelset & Co. 2 . . . . . abd
Scott—Stitt, Poole & Co., Stitt, Poole & James 54 7
J. Bowers, John M. Sherman & Co. 11, 12, 14, 15, 16, 17 . . . . . abd
J. Bauman, Ohio Oil 21 ..... abd
Sandusy—Mrs. D. Hensel, Ohio Oil 12 . abd
Wells completed 6
Production 46
Abandoned 9

MERCER COUNTY
Center—E. Snaveley, Ohio Oil 8 10
Charlotte Nolan, Masters & Howard 5 12
Hopewell—Ben Hellworth, June Oil 4 10
Liberty—C. Ballenbacher, Celina Pet. 1 2
M. A. Linn, Celina Pet. 2 10
Union—Jas. Hamilton, Wright Oil 1, 2 abd
Clayton Severns, Wright Oil 1, 2 ... abd
Griffin & Boroff, Mack P. Colt & Co. 2, 3, 4, 5, 6, 7, 8 . . . . . abd
B. B. Boroff, Mack P. Colt & Co. 1, 2, 3 . . . . . abd
G. F. Griffin, Mack P. Colt & Co. 2, 3, 4, 5, 6, 7, 8, 9 . . . . . abd
J. D. Stalter, Mack P. Colt & Co. 12, 13, 14, 17 . . . . . abd
Jefferson—Hacker hrs., D. A. Miller & Co. 5 16
Wells completed 6
Production 54
Abandoned 26

LUCAS COUNTY
Monclova—Geo. Ward, Waterville G. & O. 10 1
Oregon—Gertrude J. Niles, Ohio Oil 44 20
Gertrude J. Niles, Ohio Oil 45 5
Wells completed 3
Production 26

OTTAWA COUNTY
Harris—A. F. Alyn, Ohio Oil 3 12
H. W. Nieman, Burman Oil 3 8
Benton—Wm. Nissen, Gladieux & Herman 2 8
Catawba—E. E. Neal, Ohio Oil 1 15
Wells completed 4
Production 42

SHELBY COUNTY
Cynthian—N. Simon, Ellerman Oil 1 .. 14
McLean—A. P. Rotterman, Ft. Laramie O. & G. 1 30
Wells completed 2
Production 44

HARDIN COUNTY
McDonel—A. R. Zimmerman, Hardin O. & G. 7 25
Elizabeth McArthur, Roundhead O. & G. 6 15
Ira C. Shick, Boston-Southwestern O. & G. 1 15
Wells completed 3
Production 55

DRAKE COUNTY
Mississinewa—Joe Snyder, Cole O. & G. 6 2
Frank Siefring, Illindo Oil 15 6
Wells completed 2
Production 8

WYANDOT COUNTY
Ridge—S. C. Chesbrough, South Bend Producers 2 25

MICHIGAN

SAGINAW COUNTY
Saginaw—Casper Ulrich, Bliss Pet. 2 .. 20
Casper, Ulrich, Bliss Pet. 2 20
Ferdinand Steltzriede, Sun Oil 1 3
Charles Ulrich, Vorhees & McNalley 1 15
Fred Remer, Saginaw Prospecting 1 .. 35
Dr. D. E. Bradshaw, Sun Oil 1 12
Carrollton—J. C. Bretchelsbauer, Myron E. Lee 1 18
Reinhart, J. H. Shaltry & Co. 1 15
Chas. Priess, Valley O. & G. 1 .. 20
Buena Vista—Schwannecke, Gardner Petroleum 1 . . . . . dry
Wells completed 10
Production 158
Dry 1

WOOD COUNTY
Wells Drilling
Liberty—Frank Stratton, Man Stockwell 5.
Henry—J. P. Cleary, Ohio Oil 2.
Perrysburg—Geo. Deverna, Oko O. & G. 9.

J. J. Heilman No. 2, Oko O. & G. 1.
Wm. Budd, Oko O. & G. 6.
Chas. Thaiss, Jr., Oko O. & G. 5.
Lake—H. C. Michaelson, Lantz, Schulte & Co. 4.
Otto Brimm, Chas. F. Zeising & Co. 1.
Webster—Mike Roller, John Gedling & Co. 2.
Wells drilling, 9.

HANCOCK COUNTY
Wells Drilling

Liberty—F. Bish, R. B. Porter & Co. 4.
M. E. Discus, Kirk & Discus 4.
Wm. Fleck, Bob Kirk 1.
Allen—Hi Franks, P. J. Poole Estate 12.
Eagle—M. H. Deeds, J. M. Steen & Co. 26.
Marion—Merle E. Brower lot, Merle E. Brower 2.
Levi Wolfe, Denhoff Bros. 1.
Pleasants—Ann Henry, Bath Twp. Oil 3.
Biglick—Leroy Wonders, Ridge O. & G. Synd. 2.
H. B. Kurtz, Kirk & Fletcher 1.
Wells drilling, 10.

ALLEN COUNTY
Wells Drilling

Bath—John Lenney, Ira B. Post & Co. 2.
Hattie E. Driver, O. T. Botkins & Co. 3.
Spencer—Ed. Reynolds, South Fork Oil 4.
Amanda—J. E. Bowsher, Halcyon O. & G. 1.
Wells drilling, 4.

AUGLAIZE COUNTY
Wells Drilling

Moulton—J. H. Harshbarger, H. F. Kelly & Co. 3.
Frank W. Roth, I. C. Robinson 1.
W. E. Cook, Young & Geseichen 8.
Logan—P. E. Zimmerman, Whitling & Zimmerman 1.
Wells drilling, 4.

SANDUSKY COUNTY
Wells Drilling

Washington—A. E. Waggoner, W. C. Richards & Co. 6.
Jackson—Martha A. Talbert, Haubert & Talbert 10.
Scott—Stitt, Poole & Co., Stitt, Poole & James 55.
Madison—August H. Taulker, Home Banking 11.
Wells drilling, 4.

MERCER COUNTY
Wells Drilling

Recovery—Adam Fecher, A. W. Neely & Co. 6.
Washington—B. Jutte, Dilbone & Co. 1.
Butler—Jos. G. Wenning, J. C. Bailey 5.
Wells drilling, 3.

VAN WERT COUNTY
Well Drilling

Van Wert—Chilcote O. & G. 2.

SENECA COUNTY
Well Drilling

Clinton—Arthur Geyer, Arthur E. Geyer 2.

LUCAS COUNTY
Wells Drilling

Monclova—Wm. Black, L. W. Vermlya Rec. 2.
Oregon—R. A. Bartley, Fred Keister 10.
Henry Vilhauer, John Welton 1.
Wells drilling, 3.

OTTAWA COUNTY
Wells Drilling

Harris—A. F. Alyn, Ohio Oil 4.
Salem—A. H. Mylander, Oak Harbor Nat. Gas 1.
Wells drilling, 2.

SELBY COUNTY
Wells Drilling

Cynthian—Theresa Goffena, Ohio Oil 3.
Theresa Goffena, E. E. Laughner 5.
M. & J. Siegel, Wittmer Property Trus. 2.
McLean—Henry Ernst, L. T. McGrath 4.
Wells drilling, 4.

HARDIN COUNTY
Wells Drilling

McDonel—Ira C. Schick, Boston-Southwestern O. & G. 2.
Margaret Hoey, Boston-Southwestern O. & G. 1.
Wells drilling, 2.

DARKE COUNTY
Wells Drilling

Mississinewa—John E. Schmetz, Illindo Oil 6.
C. D. Rittenour, Ira Hance 2.
S. V. Ainsworth, R. D. Hance 1.
W. C. Disher, Cole O. & G. 15.
O. J. Current, A. W. Neely & Co. 2.
Wells drilling, 5.

PAULDING COUNTY
Rigs

Harrison—C. Springer, John Schuneck 5.
A. M. Bailey, U. S. A. Oil 6.
Rigs, 2.

CLARK COUNTY
Well Drilling

Madison—Mattinson, T. D. Friens 1.

MICHIGAN

SAGINAW COUNTY
Wells Drilling

Saginaw—Casper Ulrich, Bliss Pet. 4, 5.
Fred Engle, Bliss Pet. 2.
Wm. Scherzer, Sun Oil 1.
C. J. Rabe, Sun Oil 1.
John Schoenett, Sun Oil 3, 4.
Weiss, Sun Oil 2.
Waterworks Add., Saginaw Prospecting 2.
Rechter Estate, Saginaw Prospecting 1.
Periard, Saginaw Prospecting 1.
Scherzer, Saginaw Prospecting 1.
Brechtelsbauer, Saginaw Prospecting 1.
Chas. R. Phillips, Barker O. & G. 1.
Mrs. Jane Marshall, Vorhees & McNally 1.
Ernest Fisher, Ohio Fuel Oil Corp. 2.
Spatz, Superior Oil 2.
Weiss, Saval Development 1.
Whittier Mill land, Well-Schmidt Co. 1.
Jos. Bisner, Fordney Pet. 1.
Mrs. C. Heppler, Matthew, Heppler & Co. 1.
Lodge-Strong, Crane, Wallace & Co. 1.
Mrs. Braun, Wayco Oil Prod. 1.
On Hermansau Road, S. R. Dietrick & Co. 1.
Carrollton—Buchean, S. M. Bacon & Co. 1.
Oak-Michigan Sts., Hendricks & Co. 1.
E. E. Honholder, Saginaw City Bldg. 1.
John Winters, W. G. Berghorn & Co. 1.
Thomas Walker, Chas. P. Brandt & Co. 1.
G. & E. Spats, Savel Development 2.
J. C. Brechtelsbauer, Myron E. Lee 2.
Near Jackson St., Fordney Pet. 1.
Fred Tomforde, Great Lakes Oil 1.
Graham-Sparling, Local Pet. 1.
Chas. Priess, Valley O. & G. 2.
Hemmeter, Saginaw Prospecting 1.
Buena Vista—Geo. Wickham, Wannigas Oil Corp. 1.
Chas. H. Kretchmer, Saval Dev. 1.
E. G. Rust, Saginaw Prospecting 1.
Taymouth—Geo. Judd, S. M. Bacon & Co. 1.
Spaulding—Anthony Benkert, Henry A. Martin 1.
Frankenmuth—Rogner, Brown City Pros. 1.
St. Charles—Craven, Michael McLaughlin & Co. 1.
Wells drilling, 42.

BAY COUNTY
Well Drilling

Monitor—Peter Forster, C. A. Smith, Jr., 1.

MIDLAND COUNTY
Well Drilling

Midland—Hlovacak, Saginaw Prospecting 1.

ALCONA COUNTY
Well Drilling

Harrisville—Unknown, Local concern 1.

MONROE COUNTY
Well Drilling

Dundee—Frank Roe, Jackson County O. & G. 1.

JACKSON COUNTY
Well Drilling

Napoleon—Silvers, Jackson County O. & G. 1.

ILLINOIS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Clark	9	149	0	0	0	5	5
Cumberland	2	0	2	0	0	0	0
Crawford	10	42	2	1	0	7	7
Lawrence	3	61	0	0	0	4	4
Wabash	17	906	5	0	0	21	21
Marion	2	5	1	0	0	1	1
Coles	1	0	1	0	0	1	1
Douglas	0	0	0	0	0	1	1
Jasper	2	0	2	0	0	0	0
Fayette	0	0	0	0	1	0	1
Edwards	0	0	0	0	0	1	1
McDonough	0	0	0	0	0	3	3
Madison	0	0	0	0	0	2	2
Macon	0	0	0	0	0	1	1
Morgan	1	25	0	0	0	1	1
Shelby	0	0	0	0	0	1	1
Total Sept...	47	1,188	13	1	1	49	50
Total Aug...	34	605	13	1	7	57	64
Difference..	13	583	0	0	6	8	14

WELLS COMPLETED

CLARK COUNTY

Parker—N. & K. Young, Ohio Oil 120.. 1
N. B. Lee, Chas. P. King 8 ..... dry
Westfield—Hartford Drake, Ohio Oil 17 2
Casey—J. Y. Smith, Ohio Oil 7 2
James Rush, W. C. McBride, Inc., 25. dry
George Smith, C. L. Palmer 13 4
Martonsville—E. R. Ault, Trenton Rock Oil & Gas 9 30
C. L. McClelland, Trenton Rock Oil & Gas 5 70
T. J. Ramsey, John T. Smith & Co. 4. 40
Wells completed 9
Production 149
Dry 2

CUMBERLAND COUNTY

Crooked Creek—J. B. Kelley, Huston & Co. 1 ..... dry
J. Davis, Huston & Co. 1 ..... dry
Wells completed 2
Dry 2

CRAWFORD COUNTY

Oblong—George Ziegler, Brenneman & McDonald 7 10
P. Miller, Mahutska Oil 13 ..... dry
Martin—H. E. Loudson, L. C. McDowell & Co. 1 ..... dry
Honey Creek—Claude Raville, Selby-Cisler Producing 49 2
Claude Ravelle, Selby-Cisler Producing 50 2
Oliver Lawrence, L. C. McDowell & Co. 5 16
Robinson—J. L. Firebaugh No. 1, Ohio Oil 11 9
W. W. Hall, Peoples Banking & Trust 13 1
Montgomery—G. P. Ford, Walter Squires & Co. 9 1
Prairie—A. E. Joseph, McNally & Starr 6 1
J. M. Williams, Arkansas Fuel Oil & Nolan 2 ..... abd
Wells completed 10
Production 42
Dry 2
Abandoned 1

LAWRENCE COUNTY

Dennison—William Gillespie, Ohio Oil 6 45
Victor B. Harding 38 acres, Ohio Oil 6 1
Lewis K. Leighty, Ohio Oil 45, 50 .... abd
W. A. Gould, Ohio Oil 2, 5 ..... abd
T. I. Gould, Ohio Oil 2 ..... abd
Bridgeport—C. B. O'Donnell, Snowden & McSweeney 42 15
Lawrence—Tanguary heirs, Silurian Oil 2 ..... abd
Wells completed 3
Production 61
Abandoned 6

WABASH COUNTY

Wabash—J. H. Cisil, W. C. McBride, Inc. 5 6
W. M. Banks, Hope Oil 4 100
W. M. Banks, Hope Oil 5 75
C. E. Courter, J. W. Whiteside & Co. 3 dry
Kogan heirs, Mayhugh & Co. 8 150
Kogan heirs, Mayhugh & Co. 9 60
W. O. Johnson, Adams Corner Oil Co. 2 ..... dry
Ed Armstrong, Adams Corner Oil Co. 1 120
Asa R. Gher Oil 1 60
Joe Keyser, Joe S. Young, Jr., & Co. 2 60
Joe Keyser, Joe S. Young, Jr., & Co. 3 125
C. Keyser, B. F. Wirebach & Co. 4 .. dry
F. M. Leek, Mt. Carmel Oil 6 15
Collison heirs, Ellison & Co. 4 10
Breen, Breen Oil Co. 3 60
Friendsville—J. Goodhart, Joe S. Young, Jr., & Co. 1 ..... dry
H. C. Yelton, W. M. Bell & Co. 3 ..... dry
Wells completed 17
Production 906
Dry 5

MARION COUNTY

Centralia—H. W. Adams, Ohio Oil 1 5
A. W. Webster, Petro Oil & Gas 8.... dry
Wells completed 2
Production 5
Dry 1

COLES COUNTY

Charleston — Earl Thrakill, Block Oil Corp. 1 ..... dry

JASPER COUNTY

Grandville—Ella Decker, Wimsett & Co. 1 ..... dry
G. Hadden, Upton Oil 1 ..... dry
Wells completed 2
Dry 2

MORGAN COUNTY

Section 18-15-9w—O. F. Conklin, Paul C. Irwin & Co. 1 25

CLARK COUNTY
Wells Drilling

Casey—George Smith, C. L. Palmer 14.
Martinsville—W. D. Slater, Ferriman & Co. 3.
A. W. Cavolt, Ohio Oil 6.
Wabash—Hodson, Albon & Co. 1.
Orange—Alex Beasley, W. C. McBride, Inc. 1.
Wells drilling, 5.

CRAWFORD COUNTY
Wells Drilling

Martin—Asbury Pope, Wm. C. Kennedy Co. 1.
A. W. Mann, Farnsworth & Barber 1.
A. W. Mann, Frost Oil 5.
Honey Creek—J. L. Cullon, Barber & Co. 1.
J. D. Reaville, John Phipps 7.
Robinson—Sam L. Firebaugh, Ohio Oil 11.
Montgomery—J. H. Armstrong, Dill & Co. 1.
Wells drilling 7.

LAWRENCE COUNTY
Wells Drilling

Dennison—Wm. Dennison, Ohio Oil 3.
Ellen Lutz, Ohio Oil 7.
Bridgeport—J. R. Middaugh, Ohio Oil 23.
Ellen Lutz, Big Four Oil & Gas 2.
Wells drilling, 4.

WABASH COUNTY
Wells Drilling

Wabash—W. M. Price, Risley & Co. 1.
Nora Marcotte, W. C. McBride, Inc., 5.
M. Madden, Mahutska Oil 5.
W. O. Johnson, Adams Corner Oil 3.
Mack Madden, Adams Corner Oil 9.
Ed Armstrong, Adams Corner Oil 2.
C. Keyser, B. F. Wirebaugh & Co. 5.
Tracey heirs, Tracey Oil 2.
Leek, Chas. Oldendorf & Co. 4.
Gher, Leighty, Price & Co. 1.
Joe Keyser, Joe S. Young, Jr., & Co. 1.
Ode Johnson, Joe S. Young, Jr., & Co. 1.
Walter Parkinson, unknown 1.
Mrs. Morgan, unknown 1.
Friendsville—Bob Liddle, Henningberger & Co. 1.
Abner Litherland, Henninberger & Alspaugh 1.
M. Jackson, Smith & Co. 1.
Ed Hardwick, Miller, Lengelson & Co. 2.
V. E. Tanguay, George Whitson & Co. 1.
Bellmont—P. R. Fisher, Bell Bros. 1.
Lick Prairie—Chas. S. Groff, Miller, Lenelson & Co. 1.
Wells drilling, 21.

MARION COUNTY
Wells Drilling

Centralia—H. C. Higgins, H. C. Higgins 1.

COLES COUNTY
Wells Drilling

Ashmore—Luther Houghton, Shrider & Co. 1.

DOUGLASS COUNTY
Wells Drilling

Sargent—W. E. Brown, Douglass Oil 1.

FAYETTE COUNTY
Rigs

Fayette—John Baxter, H. McCurdy 1.

EDWARDS COUNTY
Wells Drilling

French Creek—John R. Helm, Grayville Oil Synd. 1.

McDONOUGH COUNTY
Wells Drilling

Plymouth—Colmar-Stoneking, unknown 1.
Neil Thorson, W. A. Evans 1.
M. H. Williams, Fisher & Co. 1.
Wells drilling, 3.

MADISON COUNTY
Wells Drilling

Namcoki—Goodrich, Goodrich Bros. 1.
Pine Oak—Gusville, Assembly Oil & Gas 1.
Wells drilling, 2.

MACON COUNTY
Wells Drilling

Section 18-15-9w—O. F. Conklin, Paul C. Irwin & Co. 2.

SHELBY COUNTY
Wells Drilling

Holland—W. Prosser, A. L. Ginther 1.

INDIANA FIELD

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Wells	0	0	0	0	1	1	1
Blackford	1	0	1	0	0	0	0
Jay	2	10	1	0	0	3	3
Adams	4	70	1	0	5	14	19
Huntington	1	20	0	0	0	1	1
Gibson	2	0	1	1	0	2	2
Pike	4	126	0	0	3	7	10
Sullivan	1	0	0	1	0	4	4
Allen	0	0	0	0	2	2	4
Knox	1	0	1	0	0	2	2
Daviess	3	0	3	0	0	4	4
Vigo	0	0	0	0	0	1	1
Shelby	0	0	0	0	0	2	2
Dubois	0	0	0	0	0	1	1
Warrick	1	0	1	0	0	0	0
Benton	0	0	0	0	0	1	1
Johnson	0	0	0	0	0	1	1
Madison	0	0	0	0	0	1	1
Martin	0	0	0	0	0	1	1
Monroe	0	0	0	0	1	0	1
Morgan	0	0	0	0	0	1	1
Total Sept...	20	226	9	2	11	49	60
Total Aug.	33	631	6	8	7	48	55
Difference ..	13	405	3	6	4	1	5

WELLS COMPLETED

BLACKFORD COUNTY

Harrison—A. F. Gerard, Montpelier Dev. 3 ..... dry

JAY COUNTY

Penn—Sarah J. Bourne, Claud Thompson 1 ..... dry
Bear Creek—Irwin Campbell, N. T. Smith & Co. 4 10
Wells completed 2
Production 10
Dry 1

ADAMS COUNTY

Jefferson—Wm. Bose, George S. Lackett 1 25
Wm. Smithley, Richberne O. & G. 3.. 25
Blue Creek—Ed. Lugabill, Paul Schulte 1 26
Wabash—Armstrong hrs., Chicago Oil 3 dry
Wells completed 4
Production 76
Dry 1

HUNTINGTON COUNTY

Salamonie—W. D. Bonifield, Wood & Canaday 7 20

GIBSON COUNTY

Barton—M. M. Conrad, Bell Bros. 1 ... gas
Washington—Joe Armstrong, Bell Bros. 1 ..... dry
Patoka—J. S. Dickson, Ohio Oil 2, 3 .. abd
Wells completed 2
Dry 1
Gas 1
Abandoned 2

PIKE COUNTY

Logan—Manda Williams, Claud Chandler & Co. 1 81
C. Atkinson, Consolidated Oil & Co. 4 26
Clay—C. Waltz, A. B. Bement 5 5
Monroe—Geo. A. Taylor, Gem Oil Corp. 3 20
Wells completed 4
Production 128

SULLIVAN COUNTY

Gill—C. W. Hardy, Fred Bays 1 ..... gas

KNOX COUNTY

Decker—Ballentine 515-a, Eastern Gulf Oil Corp. 1 ..... dry

DAVIESS COUNTY

Veale—D. K. Morgan, Neal & Co. 1.... dry
Washington—J. F. Graham, Ohio Oil 1 dry
J. W. Backus, Otto Geiger & Co. 1 .. dry
Wells completed 3
Dry 3

WARRICK COUNTY

Pidgeon—Vock-Folson, Turner O. & G. 1 dry

WELLS COUNTY
Well Drilling

Nottingham-John Zarris, Local company 1

JAY COUNTY
Wells Drilling

Green—Ray Houck, Bloxsome & Co. 1.
Penn—S. E. Davis, Amber Oil Prod. 11.
Bear Creek—L. D., G. F. & L. E. Bone, Central West O. & G. 3.
Wells drilling, 3.

ADAMS COUNTY
Rigs

Jefferson—John Parr, Geo. S. Lacknett 1.
Geo. Zehr, Ray Grimm 1.
Blue Creek—J. O. Maloney, John King 1.
Wabash—Mrs. Dan Hawbacher, Fink & Smith 2.
Monroe—Stengle-Craig, R. S. Anderson & Co. 2.

Wells Drilling

Jefferson—John Ballenbacher, W. E. McKelvey & Co. 2.
Joe Peel, W. E. McKelvey & Co. 1.
Mary J. Niblick, J. H. Harmon & Co. 7.
R. T. Wilson, Alvin C. Spindler 1.
Wm. Smitley, Richberne O. & G. 4.
Wm. Boze, Geo. S. Lacknett 2.
Wm. Kerr, Homer Pontius 1.
C. Gerber, Robt. Maybeer 1.
John F. Teeter, J. W. O'Neill & Co. 1.
Blue Creek—Paul Schulte, Paul Schulty 8.
Ed. Lugabill, Paul Schulte 2.
Wabash—Mrs. Bert Parr, M. S. Daugherty 1.
J. B. Steiner, M. S. Daugherty & Co. 3.
Southwest Berne—John H. Hilty, Robt. Maybeer & Co. 1.
Rigs, 5; wells drilling, 14; total, 19.

HUNTINGTON COUNTY
Well Drilling

Salamonie—J. L. Priddy, March Pet. 11.

GIBSON COUNTY
Wells Drilling

Washington—Veirling hrs., Euclid Oil 3.
Montgomery—John Enlow, Enlow & Co. 1.
Wells drilling, 2.

PIKE COUNTY
Rigs

Logan—E. Beck, Alex Singer & Co. 2.
D. S. Huey, Noble-Solyard Oil 10.
Ern Wilson, Gray & Co. 1.

Wells Drilling

Logan—Wm. Miley, J. Morrisey & Co. 1.
Ern Wilson, Wiser Oil 2.
Walter Miley, Henry Skidmore & Co. 3.
Mandy Williams, Claud Chandler & Co. 2.
C. Atkinson, Consolidated Oil Dev. 5.
Clay—Stewart Bros. Murphy Oil 4.
Washington—Eliza Martin, Molton & Noble 1.
Rigs, 3; wells drilling, 7; total, 10.

SULLIVAN COUNTY
Wells Drilling

Fairbanks—J. V. Merrill, Ohio Oil 22.
J. F. Harrison, Hollingsworth & Co. 5.
John Hunt, A. R. Morris 1.
Turman—J. T. Carruthers, Dugger parties 4
Wells drilling, 4.

ALLEN COUNTY
Rigs

Maumee—D. Helmke, Waterloo O. & G. 3.
J. F. Butt, Estes, Manion & Co. 3.

Wells Drilling

Maumee—M. Roamake, Schuran Oil 1.
J. F. Butt, Estes, Manion & Co. 2.
Rigs, 2; wells drilling, 2; total, 4.

KNOX COUNTY
Wells Drilling

Decker—Nellie M. Orr, Eastern Gulf Oil Corp. 1.
Harrison—W. E. Harrison, Murphy Oil 5.
Wells drilling, 2.

DAVIESS COUNTY
Wells Drilling

Veale—H. Ragsdale hrs., Peek Oil 2.
Andy Gress, Neal & Co. 1.
Allison hrs., Perise Cavinal & Co. 1.
Gus Wonders, Thorne O. & G. 2.
Wells drilling, 4.

VIGO COUNTY
Well Drilling

Riley—Sec. 14-11-8, E. D. Fagan & Co. 1.

SHELBY COUNTY
Wells Drilling

Van Buren—J. Harshbarger, L. N. Nicholson 1.
Brandywine—Elmer Vernon, Indianapolis parties 1.
Wells drilling, 2.

DUBOIS COUNTY
Well Drilling

Cass—W. Meissner, Wheeler & Co. 1.

BENTON COUNTY
Well Drilling

Three miles east Oxford—Jesse Voliva, Chicago Co. 1.

JOHNSON COUNTY
Well Drilling
NW of Franklin—Universal Dev. 2.
MADISON COUNTY
Well Drilling
Near Pendleton—Keesling, Pendleton Nat. Gas 1.
MARTIN COUNTY
Well Drilling
Loogoottee—Kenner Dilley, Loogoottee L. & F. Co. 2.
MONROE COUNTY
Rig
Polk—B. F. Morgan & Co. 2.
MORGAN COUNTY
Well Drilling
Near Mooresville—Gilbert Gray & Co. 1.

KENTUCKY-TENNESSEE

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Warren	6	12	3	0	2	11	13
Allen	9	5	6	0	0	13	13
Barren	27	299	3	0	0	30	30
Owensboro district	21	221	5	0	2	28	30
Cumberland-Monroe	3	244	1	0	2	16	18
Simpson	1	0	1	0	0	1	1
Casey	0	0	0	0	1	1	2
Christian	0	0	0	0	0	1	1
Clinton	0	0	0	0	0	4	4
Grayson	0	0	0	0	0	3	3
Butler	0	0	0	0	0	1	1
Wayne	4	3	2	0	0	6	6
Lee-Owsley	6	5	1	1	0	7	7
Estill	0	75	1	0	0	8	8
Wolfe	0	0	0	0	0	2	2
Powell	0	0	0	0	0	1	1
Lawrence-Johnson	11	85	0	0	0	12	12
Johnson-Magoffin	4	198	0	0	1	22	23
Floyd-Knott	3	29	0	1	0	5	5
Knox	0	0	0	0	0	4	4
Morgan	0	0	0	0	0	3	3
Elliott	0	0	0	0	1	3	4
Menifee	0	0	0	0	0	2	2
Laurel	0	0	0	0	0	1	1
Jackson	0	0	0	0	0	1	1
Greenup	1	0	0	1	0	0	0
Carter	0	0	0	0	0	1	1
McCreary	0	0	0	0	0	2	2
Kentucky	104	1,089	24	3	9	191	200
Tennessee	0	0	0	0	0	10	10
Mississippi	0	0	0	0	5	10	15
Alabama	0	0	0	0	0	4	4
Florida	0	0	0	0	4	9	13
Total Sept.	104	1,089	24	3	18	224	242
Total Aug.	113	2,326	21	3	19	215	234
Difference	9	1,237	3	1	1	9	8

WELLS COMPLETED
WARREN COUNTY
Bowling Green—Allen Manning, H. W. Teague & Co. 4 ..... dry
Bessie Snell Co., New Domain Oil & Gas 5 5
R. C. Smith, H. V. Taylor, Atty. 18 ... 2
George Perkins, C. P. Tannehill 1 ..... dry
Cooper Morgan, E. H. Fuller 2 5
J. W. Pugh, George McGinley 22 ..... dry

Wells completed 6
Production 12
Dry 3

ALLEN COUNTY
Scottsville—Frank Gilson, O. M. Widdowson 6 1
E. D. Moorehead, Steubenrach & Co. 5. dry
Dora B. Corbitt, Stinson, Morrow & Co 5 ..... dry
Dink Britt, H. B. Brashers 9 ..... dry
I. P. Hill, F. J. Trapp 13 3
L. S. Barlow 15-A, M. L. Herpalshimer 1 ..... dry
Warren McReynolds, Mrs. John McAlpine 10 1
W. M. Dodson, A. Davis 5 ..... dry
Enochs, Mrs. Laura Spencer 1 ..... dry

Wells completed 9
Production 5
Dry 6

BARREN COUNTY
Emery-Moore Pool — Travis, Fred C. Moore 14 8
W. E. Steffey, Saams & Co. 4 5
Hall Baker Pool—H. W. Duff, Consolidated Gas 40 12
H. W. Duff, Consolidated Gas 41 25
H. W. Duff, Consolidated Gas 42 20
H. W. Duff, Consolidated Gas 43 20
H. W. Duff, Consolidated Gas 44 20
H. W. Duff, Consolidated Gas 45 20
H. W. Duff, Consolidated Gas 46 25
McGuire, R. A. Stohr 1 4
Pace, L. W. Preston 1 3
Gorby Pool—Richardson, L. J. Emery, Jr., Sons 3 5
Dickens, L. J. Emery, Jr., Sons 3 6
Lessenberry, T. L. Gorby 3 3
Lessenberry, T. L. Gorby 4 5
Knob Road Pool—Richardson, Star Oil & Gas 11 10
White, R. B. Tyler Co. 9 5
White, R. B. Tyler Co. 10 10
White, R. B. Tyler Co. 11 10
C. D. Boyd, Ziegler Bros. 7 ..... dry
Lecta Pool—C. B. Jones, Esslinger Oil 11 20
C. B. Jones, Esslinger Oil 12 20
C. B. Jones, Esslinger Oil 13 30
Bartlett, Esslinger Oil 2 10
Rock Hill Road—Kinslow, Sanson, Warner & Co. 1 ..... dry
T. J. Smith, Smith & Snyder 3 3

Wells completed 27
Production 299
Dry 3

OWENSBORO DISTRICT
(Hancock-Ohio-Daviess Counties)
Owensboro—Allie Evans, Butte Dredging Co. 3 25
Allie Evans, Butte Dredging Co. 4 1
Jesse Ambrose, Rex-Pyramid Oil 1 10
A. Martin, Ellis & Courson 1 ..... dry
J. U. Bartley, Wood Oil 1 25
J. U. Bartley, Wood Oil 2 20
J. J. Midkiff, White Plains Oil & Gas 7 12
Ira Howard, White Plains Oil & Gas 1. dry
John C. Ward, White Plains O. & G. 4 15
C. A. Kelley, Penn-Indiana Oil Synd. 4. dry
Simpson heirs, Penn-Indiana Oil Synd. 1 20
B. D. Spurrier, Penn-Indiana Oil Synd 1 20
R. B. Powers 100-A, Penn-Indiana Oil Synd. 7 10
O. T. Burdette, Vicion Oil 11 8
O. T. Burdette, Vicion Oil 12 5
H. D. Brown, C. A. Leeper 5 5
M. Coleman, Thompson & Tremor 2 ..... dry
Bert Thompson, Spice Knob Oil 7 25
Nannie Brown, Chicago Pet. Synd. 2 ..... dry
Guenther-Gantt, Chicago Pet. Synd 9 .. 15
W. A. Probus, C. A. Leeper 2 5

Wells completed 21
Production 221
Dry 5

CUMBERLAND-MONROE COUNTIES
Burkesville—H. E. Thurman, West & Co. 1 ..... dry
Hopewell Pool—Brockman, Wood, Haislett, McLennon & Co. 2 144
Brockman, Wood, Haislett, McLennon & Co. 4 100

Wells completed 3
Production 244
Dry 1

SIMPSON COUNTY
Franklin—K. Bland, K. Bland 7 ..... dry
WAYNE COUNTY
District 2—Miller Bros., Wood Oil 65 ... dry
District 5—D. C. Denney, O. M. Carter 1 1
Gregory & Ramsey, Davis Oil 1 ..... dry
Gregory & Ramsey, Davis Oil 2 2

Wells completed 4
Production 3
Dry 2

LEE-OWSLEY COUNTIES
District 16—J. W. Proffit heirs, Superior Oil Corp. 28 3
District 18-B—J. B. Scott, Petroleum Exploration 1 ..... gas
District 35—Delina McGuire, S. S. Yantis & Co. 3 ..... dry
H. D. Parrish, H. B. Sipple 3 5
District 36—Dean heirs, Henry Oil 1 .... dry

Wells completed 5
Production 8
Dry 2
Gas 1

ESTILL COUNTY
District 8—Oscar Tipton heirs, Reno Oil 8 12
Miller Ballard, Reno Oil 8 10
Simp Horn, Superior Oil Corp. 20 10
Simp Horn, Superior Oil Corp. 21 8
Simp Horn, Superior Oil Corp. 22 10
Dudley Alexander, Superior Oil Corp. 1 5
Wm. Neal, Wood Oil 11 10
Thos. Mitchell, Brenner & Adams 1 ... dry
Thos. Mitchell, Brenner & Aadms 2 ... 10

Wells completed 9
Production 75
Dry 1

LAWRENCE-JOHNSON COUNTIES
District 22—L. T. Sparks, Garrison & Townsend 12 5
J. N. Sparks, Garrison & Townsend 11. 4
Foster Ferguson, Garrison & Townsend 5 6
James Skaggs, Swiss Oil Corp. 20 7
District 22-A—C. K. Dobyne No. 1, Swiss Oil Corp. 23 8
District 32—J. J. Gambill, Swiss Oil Corp. 44 10
P. P. Holbrook, Swiss Oil Corp. 46 10
Proctor Sparks, Swiss Oil Corp. 33 10
Esta Walters, Wheeler-Watkins Oil & Gas 4 10
District 33—J. M. Fyffe, Swiss Oil Corp. 22 5
J. M. Fyffe, Swiss Oil Corp. 23 10

Wells completed 11
Production 85

JOHNSON-MAGOFFIN COUNTIES
District 25—Gardner Blanton, Atlantic Oil Producting 22 8
District 31—B. F. Whitt, Hupp, Duff & Chiles 2 40
B. F. Whitt, Hupp, Duff & Chiles 3 ... 40
H. H. May, South Fork Oil 9 20

Wells completed 4
Production 103

FLOYD-KNOTT COUNTIES
District 21—Andy Coburn, Ivyton Oil & Gas 1 4
Jake Allen, Ivyton Oil & Gas 1 25
Felix Allen, Ivyton Oil & Gas 1 ..... gas

Wells completed 3
Production 29
Gas 1

GREENUP COUNTY
Greenup—J. H. Fiannery, Petroleum Exploration 1 ..... gas
WARREN COUNTY
Rigs
Bowling Green—Worden, C. P. Tannehill 1.
Temp Bailey, Petroleum Exploration 5.
Wells Drilling
Bowling Green—Hundley & Walters, W. Roy Hogan 2.
Georgia Ann Davenport, T. A. Sheridan 6.
Keller, Alf F. Hughes 1.
Covington 7, Wm. Zimmer 10.
Jas. Deathridge, A. B. Hudson, Atty. 3.
Charles Cox, A. F. Bannon 18.
Ora S. Davenport, Ruther Turner 5.
W. R. Hunton, P. H. Lavelle 9.
J. G. Vance, Dr. W. B. Cauble 11.
D. C. Butler, Thessen & Cupler 2.
Jeff Coley, Phillips, Stewart & Co. 1.
Rigs, 2; wells drilling, 11; total, 13.
ALLEN COUNTY
Wells Drilling
Scottsville—Andy Smith, Lackawana Prod. & Ref. 32.
J. W. Frost, W. G. Moorman, Rec., 14.
Angel Meredith, G. W. Hahn 11.
Newman, Bastrus & Co. 3.
S. & K. Thratton, Vic DeCaigney 7.
Lon Oliver, Cyphus & Harley 5.
John Fraley, Reaher & Co. 1.
W. M. Hall, Reaher & Co. 1.
John Buchanan, Buchanan & Buchanan 9.
Lee Moore No. 2, Lee Moore 7.
I. Strait, Dodson & Strait 1.
W. M. Dodson, A. Davis 6.
Connie Jackson, James Dobie Atty. 1.
Wells drilling, 13.
BARREN COUNTY
Wells Drilling
Emery-Moore Pool—Howard, Fred C. Moore 13.
Wilson, Phil Kopel 4.
Travis, Fred C. Moore 15.
Hall Baker Pool—Hutcherson, Wood Oil Co. 1.
R. E. Evans, Harrington & Norris Bros. 12.
H. W. Duff, Consolidated Gas Co. 47, 48, 49.
Etoil Area—C. S. Spradlin, Wood Oil 1.
Greer, Wood Oil 1.
Gorby Pool—Everette, Kopel Oil 2.
Ralston, Sanson & Bowers 1.
Dearing, Watson Oil 3.
T. L. Gorby, Hepler & Gorby 6.
M. S. Chamberlain, Houchins Leasehold 3.
Hatfield, J. J. Sayer 5.
Beaver Creek—Maddox Heirs, Harrington & Norris Bros. 2.
Tompkinsville Road—Mattis, Baker & Co. 1.
Knob Road District—Darter, Ziegler Bros. 3.
C. D. Boyd, Ziegler Bros. 8.
Richardson, Star Oil & Gas 12, 13.
Harris, Wiggins & Gillespie 4.
Lecta Pool—Spencer, Wiggins & Gillespie 1.
Morgan, Baird & DeCaigney 4.
Grady, Coombs & Co. 4.
C. B. Jones, Esslinger Oil 14.
Dean, Merrifield & Hedges 1.
Richardson Pool—Davidson, Houchins Leasehold 4.
Rock Hill Road—Petty, Sanson, Warner & Co. 1.
Wells drilling, 30.
OWENSBORO DISTRICT
(Hancock-Ohio-Daviess Counties)
Rigs
Owensboro—O. T. Burdette, D. H. White 1.
Lafe Payne 167-A, Newton Oil 1.
Wells Drilling
Owensboro—Daly, Ohio Oil 1.
Lonzo Crowe, Ohio Oil 1.
C. Banham, Ohio Oil 1.
Ellis-Heflin, Ohio Oil 2.
Jesse Ambrose, Rex-Pyramid Oil 2.
J. U. Bartley, Wood Oil 3.
Drane-Owens, Wood Oil 1.
Ciscero Whittenhill, Lew J. Emery, Jr., Sons 1.
Buck Sanders, Petroleum Exploration 1.
Laura Mercer 34-A, Penn-Indiana Oil 9, 10.
J. L. Phillips, Penn-Indiana Oil 4.
C. A. Kelley, Penn-Indiana Oil 4.
Guenther-Gant, Chicago Pet. Synd. 10.
J. B. Ellis 50-A, White Plains Oil & Gas 5.
J. R. Ellis 100, Jack W. Loman, Trus., 2.
J. A. Greer, 100-A, C. A. Leeper 2.
John Raymond, C. A. Leeper 1.
W. T. Bickett, C. E. Daugherty 3.
Lucinda E. Crowe 153-A, C. E. Daugherty & Co. 14.
J. H. McDaniel, Security Oil 2.
Will Howard, Petroleum Extraction 1.
Kirk-Woodward, Petroleum Extraction 2.
Pegram, Boyles, Powers & Co. 1.
W. S. Gabbard, Bert Thompson 3.
J. L. Trogdon, Johnson & Engle 1.
Red Hill School, C. C. Chrysler & Co. 1.
A. Westerfield, Ellis & Thomas 1.
Rigs, 2; wells drilling, 28; total, 30.
CUMBERLAND-MONROE COUNTIES
Rigs
Hopewell Pool—Sand Lick, Berthold & Waddle 1.
F. Baker, Baird & Hickman 2.
Wells Drilling
Hopewell Pool—Fulton Grider, Baird & Hickman 3.
S. Elliott, Crawford & Co. 2.
Brockman, Wood, Haislett & McLennon 5.
Patterson, Phillippi & Co. 1.
Hi. Jackman, Crawford & Co. 1.
Sadie Bledson, J. E. Bollinger 1.
Burkesville—D. Garman, West & Co. 1.
Sulphur Creek—Davidson, Wilcox Bros. 1.
J. B. Riddle, Hook & McComas 2.
A. A. Huddleston, Southern Prod. & Ref. 11.
West Fork—C. T. Cheatham, Alta Oil 2.
Bear Creek—J. A. Dickens, E. M. Treat & Co. 2.
J. Jones, Graves Bros. & Co. 1.
Steel Fork—Sarah Shackles, Wilcox Bros. 5.
Pulsey Creek—T. B. Hogan, W. S. Raydure & Son 1.
Rigs, 2; wells drilling, 16; total, 18.
SIMPSON COUNTY
Well Drilling
Franklin—Holeman, Lincoln Oil Producing 3.
CASEY COUNTY
Rig
Near Avon—T. B. Hannonde, Col. Less Combest 1.
Well Drilling
Dunnville—Ben Russell, Irwin & Anschutz 1.
Rig, 1; well drilling, 1; total, 2.
CHRISTIAN COUNTY
Well Drilling
Hopkinsville—W. E. Denton, Petroleum Exploration 1.
CLINTON COUNTY
Wells Drilling
Lillydale—Jane Scott, Owens, Long & Co. 1.
Shepley heirs, Delaney & Ewing 1.
Ed Upchurch, Clinton Oil 2.
Pierce heirs, McClintock, Reid & Heckathorn 2.
Wells drilling, 4.
GRAYSON COUNTY
Wells Drilling
Leitchfield—George Kenser, Walter & Samuel Chenault 1.
Carville, Robinson & Co. 1.
Jones, Robinson & Co. 1.
Wells drilling, 3.
BUTLER COUNTY
Well Drilling
Morgantown—Evans, P. A. & B. A. Evans 1.
WAYNE COUNTY
Wells Drilling
District 2—Miller Bros. & Wood Oil 66.
Smith, Hogue & Coast 1.
District 3—Burnett heirs, D. A. Adkins 6.
Alfred Cooper, Bell & Bach 14.
District 5—Boston Lair & Co., Ross Heirs 6.
District 13—Nancy L. Jones heirs, W. L. Souther 3.
Wells drilling, 6.
LEE-OWSLEY COUNTIES
Wells Drilling
District 18—Wylie Bryant, Cook & Co. 2.
Flahaven Land Co., Ohio Oil 84.
District 18-B—Gabbard heirs, Petroleum Exploration 1.
District 36—Thos. Foreman, Rex-Pyramid Oil 1.
Thos. Foreman, Standard Oil of Ky. 1.
Thos. Foreman, C. B. Groves, Trus., 2.
Baker, Watkins & Co. 1.
Wells drilling, 7.
ESTILL COUNTY
Wells Drilling
District 7—John Bill Rogers, Mt. Springs Oil 14.
Malissa Rogers, Mt. Springs Oil 4.
District 8—Simp Horn, Superior Oil Corp. 23, 24.
Dudley Alexander, Superior Oil Corp. 2.
William Neal, Wood Oil 12.
Joe Neal, Wood Oil 1.
Thos. Mitchell, Brenner & Adams 3.
Wells drilling, 8.
POWELL COUNTY
Well Drilling
District 15—John A. Rogers, W. O. Dunham 6.
WOLFE COUNTY
Wells Drilling
District 6—Spencer heirs, Petroleum Exploration 5.
District 9—Wm. Perry, Brenner & Adams 1.
Wells drilling, 2.
LAWRENCE-JOHNSON COUNTIES
Wells Drilling
District 22—J. M. Sparks, Holland & Warde 5.
W. W. Bailey, Garrison & Townsend 6.
Foster Ferguson, Garrison & Townsend 6.
James Skaggs, Swiss Oil Corp. 21.
District 22-A—Martha Kelley, Swiss Oil Corp. 15.
Jesse Lyon, Keaton Oil & Gas 33.
District 1—Jack Priest, Hope Construction & Ref. 1.
District 32—P. P. Holbrook, Swiss Oil Corp. 47.
Proctor Sparks, Swiss Oil Corp. 34.
Esra Walters, Wheeler-Watkins Oil & Gas 5.
District 33—Nora Lemaster, J. M. Meek, Trustee, 4.
D. L. Skaggs, Swiss Oil Corp. 2.
Wells drilling, 12.
JOHNSON-MAGOFFIN COUNTIES
Wells Drilling
District 25—Gardner Blanton, Atlantic Oil Producing 23.
P. E. Caudill, Reno Oil 11.
District 27—Cholly Conley, Kentucky-Indiana Oil Trust 7.
Sam Williams, S. J. Patrick 1.
W. M. Prater, Structure Oil 1.
Thos. J. Powers, Clyde Oil 3.
District 29—W. H. Conley, Bed Rock Petroleum 30.
Mary Burke, R. G. Gillespie Estate 7.
Yearns Hale, R. G. Gillespie Estate 5.
John Gardner, New Domain Oil & Gas 14.
A. A. Almy, Cumberland Petroleum 7.
Oscar Wheeler, Hudson & Collins 13.
District 30—Sam Blanton, R. G. Gillespie Estate 20.
Lee Owens, Oliver Jenkins 2.
Bracken heirs, Phillips & Young 4.
F. M. Tackett, F. M. Tackett 2.
Pelphrey heirs, Pelphrey heirs 2.
District 31—W. E. Patrick, Bed Rock Petroleum 5.
J. H. Arnett, Bed Rock Petroleum 24.
R. L. Salyer, No. 2, Burning Fork Oil Synd. 3.
B. F. Whitt, Hupp, Duff & Chiles 4, 5.
Rigs, 1; wells drilling, 22; total 23.
FLOYD-KNOTT COUNTIES
Wells Drilling
District 21—Mouse Martin, Louisville Gas & Electric 3.
S. C. Allen, Eastern Carbon Black 2.
W. P. Lesley, Eastern Carbon Black 3.
George Geargart, Midas Gas 2.
Sol Patton, Ivyton Oil & Gas 1.
Wells drilling, 5.
Bailey Switch—Dizney, Dizney & McKee 1.
Sinking Creek—Foreman, Foreman Lumber 1.
Red Bird Creek—Beattyville Parties 1.
Indian Creek Dome—Helton, Petroleum Exploration 1.
Wells drilling, 4.
MORGAN COUNTY
Wells Drilling
District 6—T. L. Elam, Popping Rock Oil 2.
West Liberty—Pleasant Run, Jim Patton 1.
Blair Mills—Collier & Co. 1.
Wells drilling, 3.
ELLIOTT COUNTY
Rig
District 34—D. A. Lewis, Smith & Garrison 2.
Wells Drilling
District 34—J. M. Ison, Edra Lee Oil & Gas 4.
Lincoln Creek—Joe Wagner, J. M. McDonald 1.
Rocky Branch—Henderson, Eastern Gulf Oil Corp. 1.
Rig, 1; wells drilling, 4; total, 4.
MENIFEE COUNTY
Wells Drilling
Leatherwood — Widow Reed, McKinney Bros. 1.
Hamp Rawlins, W. O. Bach 3.
Wells drilling, 2.
LAUREL COUNTY
Well Drilling
10 Miles Southwest London—Standard Oil of Ky. 1.
JACKSON COUNTY
Well Drilling
McKee—Isaac, Standard Oil of Ky. 1.
CARTER COUNTY
Wells Drilling
Smokey Creek—Hi Owens, R. A. Chiles 1.
Trough Camp Creek—Robbins & Watson 1.
Limestone—Carpenter heirs, Hovis, Young & Marcum 1.
Wells drilling, 3.
MCCREARY COUNTY
Wells Drilling
McCreary—McCreary County Oil & Gas 1.
Pleasant Run Creek—Asher, Sampson & Co. 1.
Wells drilling, 2.
TENNESSEE
CLAY COUNTY
Wells Drilling
Clark Pool—J. M. Gray, H. Z. Clark & Co. 2.
A. T. Davis, Dixon, Bayless & Douglas 3.
Lillydale—G. M. Gamewell, Owens, Long & Co. 1.
Fox Springs—Meyers, Owens, Long & Co. 1.
Near Timothy—Leech & Hunt 1.
Celina—Geo. Plumley, John B. Kerr 1.

A New Idea in

GAUGE RODS

Vertical Readings

Impressed Variations Size 1⅛"x⅞"

"A Better Rod—At Less Cost"

Standard Graduations—Gallon Measures to Order

At Your Supply Store or Direct From Factory

MISSOURI WOOD WORKING CO.

5900 So. Broadway St. Louis, Mo.

CARBON (BLACK DIAMONDS)
FOR DIAMOND CORE DRILLS

IMPORTERS
INDUSTRIAL DIAMONDS

MANUFACTURERS
DIAMOND POINTED
TOOLS FOR ALL
MECHANICAL PURPOSES

WRITE OR WIRE FOR CATALOGUE AND FULL PARTICULARS
THE DIAMOND DRILL CARBON CO.
61 PARK ROW, NEW YORK, N.Y. CABLE ADDRESS, CREDOTAN, N.Y.

MYERS PUMPS

FOR EVERY PURPOSE

We have been manufacturing Myers Pumps for Every Purpose for over fifty years—a modern plant—a daily production of three pumps and over every minute during working hours—a world-wide distribution through nearly twenty-five thousand dealers, jobbers and supply houses, indicate our responsibility as well as the quality of our products. If you are interested in pumps for any service, of either large or small capacity, write us for catalog and prices.

THE F. E. MYERS & BRO. CO. Ashland, Ohio
ASHLAND PUMP AND HAY TOOL WORKS

SKINNER Clamps stop leaks

Send for Catalog—M. B. SKINNER CO., 562 Washington Boulevard, CHICAGO.

INVESTING MILLIONS

Readers of The Oil and Gas Journal are investing millions of dollars in oil leases, royalties, production and used equipment of all kinds.

Advertise in the Classified Wants Section so that they may have a chance to bid on your property or equipment.

The Oil and Gas Journal
TULSA, OKLA.

It belongs to you

Whenever you want to buy or sell anything use The Oil and Gas Journal Classified Wants Section.

It will help you!

Geo. Tinsley, Lewis & George 1.
Turkey Creek—Potter, Mendenthal & Co. 1.
Willow Grove—Widow Hargrave, Carnahan & Horn 2.
Jim Stover, A. A. Alexander & Co. 2.

MORGAN COUNTY
Wells Drilling

Sunbright—Somers, Cockrell & Co. 1.
Glades, Knoxville Patries 1.
Russell, Russell Producing Co. 7.
Wells drilling, 3.

MISSISSIPPI

FRANKLIN COUNTY
Rig

Jackson—Pear River, New York Parties 1.

COPIAH COUNTY
Rig

Hazlehurst—Brandywine, Benj. W. White 1.

HOLMES COUNTY
Rig

Coxburg—Sec. 18-13-1, Free Run Oil 1.

LEAKE COUNTY
Rig

Near Conway—Chas. N. Haskell 1.

ATTALA COUNTY
Rig

At Alta—B. B. Jones 1.

CLAIBORNE COUNTY
Wells Drilling

Sec. 5-11-12—Young, Mississippi Exploration 1.
West Side County—Michael Zink 1.
Wells drilling, 2.

YAZOO COUNTY
Well Drilling

Sec. 25-13-1w—Reed, Willis & Burns 1.

HINDS COUNTY
Well Drilling

Jackson—Reeder, Johnson Oil 1.

WASHINGTON COUNTY
Well Drilling

Sec. 30-14-9—Glen Allen, Williams Alhambra Oil 1.

TISHIMINGO COUNTY
Well Drilling

Iuka—Unknown 1.

TALLAHACHIE COUNTY
Well Drilling

Sec. 23-25-2—Harvey, Shreveport, La., Parties 1.

MARSHALL COUNTY
Well Drilling

Sec. 3-32-3—Hoffman, Tom Slick 2.

MADISON COUNTY
Well Drilling

Unknown—Transcontinental Oil 1.

STONE COUNTY
Well Drilling

Near Magic City—Sec. 36-3-2, Local Parties 1.

ALABAMA

MORGAN COUNTY
Well Drilling

Sec. 6-6-4—English, Decatur Oil 1.

HALE COUNTY
Well Drilling

Greensburg—Hale Oil 1.

SHELBY COUNTY
Well Drilling

Chelsea—Scott, Cooksey & Co. 1.

WILSON COUNTY
Well Drilling

Selma—Blue Bell Oil 1.

FLORIDA

POLK COUNTY
Well Drilling

Sec. 40-32-27—West Frostproof Land & Oil 1.

GLADES COUNTY
Wells Drilling

Sec. 15-39-32—Brewton, H. McCurdy 1.
Sec. 5-38-32—Unknown, Langford & Co. 2.
Sec. 3-38-32—Unknown, Seminole Petroleum Corp. 3.
Wells drilling, 3.

JEFFERSON COUNTY
Well Drilling

Sec. 19-2-5e—Miller-Gossard, Southern States Oil Corp. 1.

MANATEE COUNTY
Rig

Sec. 15-34-17—Robinson, Speedwell Petroleum Synd. 1.

DADE COUNTY
Well Drilling

Sec. 15-54-35—On Tamiami Trail, Miami Oil & Nat. Gas Corp. 1.

MONROE COUNTY
Rig

Sec. 6-51-31—Florida Natural Resources 1.
35-34—Biscayne Oil & Gas Co. of Miami 1.

LFON COUNTY
Well Drilling

Sec. 11-2-1e—Rhodes, Gulf Development Corp. 2.

HERNANDO COUNTY
Well Drilling

Sec. 20-23-19—Avres, Unknown 1.

PASCO COUNTY
Well Drilling

Sec. 20-25-16e—Green, Unknown 1.

OKEECHOBEE COUNTY
Rig

Sec. 22-36-35—Opal District, Preston & Gaines 1.

RESEARCH LABORATORIES

The continuing demand for a new edition of Bulletin No. 16, of the National Research Council, which contains a list of research laboratories in industrial establishments of the United States indicates that this list, assembled in 1921, apparently fills a certain need in the industrial world, and should be revised at this time. In order that the new list may be as complete as possible an appeal is made to the readers of this journal who are connected with firms now maintaining research laboratories to send a postcard giving the name and address of the firms with which they are connected to Research Information Service, National Research Council, B and Twenty-first Streets, Washington, D. C.

RANNEY OIL MINING COMPANY
LEO RANNEY, President
Oil Mine Engineers
26 Broadway
New York City

BROKAW, DIXON, GARNER & McKEE
GEOLOGISTS
PETROLEUM ENGINEERS
Examinations, Appraisals
Estimates of Oil Reserves
120 Broadway New York City
Caracas, Venezuela

Amil A. Anderson P. W. Anderson
ANDERSON & ANDERSON
Mining Engineers and Petroleum Geologists
721-722 Union Nat'l Bank Bldg.
Wichita, Kansas
Telephone Market 2887

FREDERICK G. CLAPP
Consulting Geologist and Petroleum Engineer
50 Church St., New York City

H. H. HOOD
PETROLEUM ENGINEER
AND GEOLOGIST
Explorations, Surveys, Appraisals, Audits, Consultations, Management
Suite 1582 Arcade Bldg.,
St. Louis, Mo.

Frank A. Herald John M. Herald
HERALD BROTHERS
GEOLOGISTS
PETROLEUM ENGINEERS
303 Cosden Bldg. Phone 3-8711
TULSA, OKLAHOMA

DEWITT T. RING
PETROLEUM GEOLOGIST
Armstrong Bldg.
El Dorado, Ark.

ROBERT W. CLARK
CONSULTING GEOLOGIST
AND APPRAISER
Depletion and Reserves for Income Tax
217 Commerce Bldg.
OKMULGEE, OKLA.

CARL B. ANDERSON
GEOLOGIST AND PETROLEUM ENGINEER
604 Kennedy Bldg.,
TULSA, OKLA.

CHARLES T. KIRK
JAMES E. HOOVER
CONSULTING GEOLOGISTS
Tulsa, Oklahoma
Phone 2-2821 329 Atco Bldg.

PHILLIP MAVERICK
PETROLEUM GEOLOGIST
Telephone 93
Ricker & Dodson Bldg.
SAN ANGELO, TEXAS

MARTIN VAN COUVERING
Petroleum Engineer
Formerly Petroleum Engineer California State Mining Bureau
Management of properties, engineering supervision, special reports.
Suite 814 Petroleum Securities Bldg.
Los Angeles, Cal.
Telephone: TRinity 8171

WHAT AND WHERE TO BUY

A Classified Index of Advertisers in This Publication

For Alphabetical Index See Page 25

A

Absorption Plant Equipment—
American Radiator Co.
Braun, C. F., & Co.
Campbell, J. A.
Cooper, C. & G., Co.
Griscom-Russell Co.
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.

Absorption Towers—
Hope Engineering & Supply Co.
National Gas Products Co.
Newton Process Mfg. Co.

Acetylene Apparatus —
Oxweld Acetylene Co.

Accetylene—Dissolved—
Prest-O-Lite Co., Inc.

Acetylene in Cylinders—
Prest-O-Lite Co., Inc.

Agitators—
Kaw Steel Construction Co.
Petroleum Iron Works Co.

Alloy Steel (See Steel—Alloy)—

All-Steel Drilling Rigs (See Rigs)

Aluminum Bronze Powder for Paint—
Aluminum Co. of America.

Ammonia—
Mathieson Alkali Works, Inc.

Anchor Clamps (See Clamps) —

Antimonial Leads—
Eagle-Picher Lead Co.

Apparatus—Electric—
Westinghouse Electric & Mfg. Co.

Apparatus—Motor Control—
Westinghouse Electric & Mfg Co.

Appraisers—
American Appraisal Co.

Arches—Flat Suspended—
Brady Conveyors Corp.

B

Babbitts—
Eagle-Picher Lead Co.
National Lead Co.
Ryerson, Jos. T., & Sons, Inc.

Back Up Tongs (See Tongs)—

Bailers—
Oil Well Supply Co.
Spang & Co.

Balls and Seats—
Axelson Machine Co.
Hough, Charles N., Mfg. Co.
Norris Brothers, Inc.
Northrup Equipment Co.

Balls—Bronze—
Atlas Ball Co.
Hoover Steel Ball Co.

Balls—Steel—
Atlas Ball Co.
Hoover Steel Ball Co.
Strom Steel Ball Co.

Band Wheels—Steel—
International Derrick & Equipment Co.
Marion Mch. Fdy. & Supply Co.
Moore, Lee C., & Co., Inc.
Parkersburg Rig & Reel Co.

Barrels—
Petroleum Iron Works Co.

Barytes—
National Pigments & Chemical Co.

Batteries—
National Carbon Co.

Bearings—Roller—
American Roller Bearing Co.
Timken Roller Bearing Co.

Bearings—Thrust—
Timken Roller Bearing Co.

Belting—
Bridgeport Machine Co.
Continental Supply Co.
Fenwick-Reddaway Mfg. Co.
Frick-Reid Supply Co.
Imperial Belting Co.
International Supply Co.
Murray Rubber Co.
Stanley Belting Corp.

Belting—Rubber—
Bovaird Supply Co.
Goodyear Tire & Rubber Co.
United States Rubber Co.

Bits—Disc—
U. S. Tool Co.

Bits—Fish Tail—
Federal Supply Co.
Lucey Mfg. Corp.

Bits—Rotary Disc—
Hughes Tool Co.

Bits—Rotary Rock—
Hughes Tool Co.
Reed Roller Bit Co.

Bit Steel (See Steel—Bit)—

Bleaching Powder—
Mathieson Alkali Works, Inc.

Blow-Off Valves (See Valves)—

Blowout Preventer—
Reagan Forge & Engineering Co.
Stearns-Roger Mfg. Co.

Blowpipes—
Oxweld Acetylene Co.

Boiler Insulation
Celite Products Co.

Boilers—Horizontal Return Tubular—
Brownell Co., The
Kewanee Boiler Co.
Vogt, Henry, Machine Co.

Boilers—Oil Country—
Bovaird & Seyfang Mfg. Co.
Bridgeport Machine Co.
Brownell Co., The
Coatesville Boiler Works
Continental Supply Co.
Donovan Boiler Works
Frick-Reid Supply Co.
International Supply Co.
Kewanee Boiler Co.
Lucey Mfg. Co.
National Supply Co.
Oil Well Supply Co.
Pattin Bros Co.
Republic Supply Co.
Titusville Iron Works.

Bolted Tanks (See Tanks)—

Bolts and Nuts—
Sheffield Steel Corp.

Bolt Threading Machines—
Landis Machine Co.

Bottles—Glass—
Illinois Glass Co.

Box and Pin Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

Braces—Tool—
Dunn Mfg. Co.

Brick—Fire—
Plibrico Jointless Firebrick Co.

Briquette Machines—
Porter & Co.
Simplex Equipment Co.

Bronze Valves (See Valves—Brass and Bronze)—

Buildings—Metals, Sectional (All Types)—
Austin Co.
Blaw-Knox Co.
Braden Co.
Butler Mfg. Co.
International Derrick & Equipment Co.
Marion Mch., Fdy. & Supply Co.
Truscon Steel Co.

Bulk Station Tanks (See Tanks)—

Bull Ropes—
Ajax Rope Co.
Columbian Rope Co.
Plymouth Cordage Co.
Wall Rope Works, Inc.

Bull Wheels—Steel—
International Derrick & Equipment Co.
Marion Mch., Fdy. & Supply Co.
Moore, Lee C., & Co., Inc.
Parkersburg Rig & Reel Co.

Burners—Gas—
Eureka Burner Co.

Burners—Oil—
Continental Supply Co.
Reid, Joseph, Gas Engine Co.

Bushings—Rotary Drive—
Wilson Oil Tools Corp.

C

Cable Bit Steel—
Andrews Steel Co.
Federal Supply Co.
Heppenstall Forge & Knife Co.

Cables—Drilling, Manila—
Ajax Rope Co., Inc.
Columbian Rope Co.
Continental Supply Co.
Frick-Reid Supply Co.
Plymouth Cordage Co.
Wall Rope Works, Inc.

Cables—Steel—
Ajax Rope Co., Inc.
Black Steel & Wire Co.
Broderick & Bascom Rope Co.
Continental Supply Co.
Frick-Reid Supply Co.
Hazard Mfg. Co.
Leschen, A., & Sons Rope Co.
Murray Tool & Supply Co.
National Supply Co.
Republic Supply Co.
Wickwire-Spencer Steel Corp.
Williamsport Wire Rope Co.

Calf Rope—
Ajax Rope Co., Inc.

Calf Wheels—Steel—
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.

Cannon—Oil Field—
Braden Co.

Cans—Water—
Gott, H. P. Mfg. Co.

Capping Steel—
Andrews Steel Co.

Carbon—Black Diamond—
Diamond Drill Carbon Co.
Patrick, R. S.

Cars—Tank—
American Car & Foundry Co.
General American Tank Car Corp.
Shippers' Car Line, Inc.

Cars—Tank, Leased—
American Car & Foundry Co.
North American Car Co.
Shippers' Car Line, Inc.

Casing—
Bovaird Supply Co.
Central Tube Co.
Continental Supply Co.
Emsco Derrick & Equip. Co.
Jarecki Mfg. Co.
National Supply Co.
National Tube Co.
Pittsburgh Steel Products Co.
Republic Iron & Steel Co.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.
Wheeling Steel Corp.

Casing—Wrought Iron—
Byers, A. M., & Co.
Reading Iron Co.
South Chester Tube Co.

Casing Elevators (See Elevators, Casing and Tubing)—

Casing Heads—
Arbon, Paul & Co.
Dresser, S. R., Mfg. Co.
Kansas City Hay Press Co.

Casing Lines—
Ajax Rope Co., Inc.
Hazard Mfg. Co.

Casing Shoes—
Baker Casing Shoe Co.
Bartlesville Supply Co.
Bridgeport Machine Co.
Guiberson Corp.
Oil Well Supply Co.

Castings—Acid Proof—
Duriron Co.

Castings—Alloy Steel—
Ohio Steel Foundry Co.
Sivyer Steel Casting Co.

Castings—Chrome Nickel Steel—
Sivyer Steel Casting Co.

Castings—Corrosion Resisting Non-Ferrous—
Hills-McCanna Co.

Castings—Electric Steel—
Ohio Steel Foundry Co.
Sivyer Steel Casting Co.

Castings—Grey Iron—
Ajax Iron Works.
American Car & Foundry Co.
Gaso Pump & Burner Mfg. Co.
Pittsburgh Boiler & Machine Co.

Castings—Steel—
Ajax Iron Works.
Chicago Steel Foundry Co.
Ohio Steel Foundry Co.
Sivyer Steel Casting Co.

Cement—Fire and High Temperature—
General Insulating & Mfg. Co.

Chains—Conveyors—
Chain Belt Co.
Link-Belt Co.

Chains—Oil Well—
Baldwin Chain & Mfg. Co.
Chain Belt Co.
Link-Belt Co.

Chains—Power Transmission—
Baldwin Chain & Mfg. Co.
Chain Belt Co.
Link-Belt Co.

Chemical Treatment Crude Oil Emulsion—
Barnickel, Wm. S., & Co.

Chlorine—Liquid—
Mathieson Alkali Works, Inc.

Circulating Heads—
Wilson Oil Tools Corp.

Clamps—Anchor—
Bartlesville Supply Co.

Clamps—Belt—
Federal Supply Co.

Clamps—Collar Leak—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.
Skinner, M. B., Co.

Clamps—Drilling—
Western Supply Co.

Clamps—Hoisting—
Newton Process Mfg. Co.

Clamps—Pipe—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.

Clamps—River—
Dresser, S. R., Mfg. Co.
Gaso Pump & Burner Mfg. Co.

Cloths—Wiping—
Nye Tool & Machine Works.

Clutches—Friction, Plate Type—
Twin Disc Clutch Co.

Coal Pulverizers—Unit—
Power Specialty Co.

Cocks—Brass & Iron—
Lunkenheimer Co.
Walworth Co.

Cocks—Plug—
Homestead Valve Mfg. Co.

Cocks—Plug, Acid Proof—
Duriron Co.

Cocks—Water Gauge—
Shaffer, J. E., Co.
Smith Separator Co.

Coils and Bends—Pipe—
Harrisburg Pipe & Pipe Bending Co.
Midwest Pipe & Supply Co.

Compounds—Boiler—
Dearborn Chemical Co.

Compounds—Cement, Quick Setting—
Master Builders Co.
Sullivan Co.

Compounds—Joint Sealing—
Key Boiler Equipment Co.

Compounds—Oil Well Cleaning—
Sullivan Co.

Compressed Air Process—
Air Cleaning & Reaming Corp.

Compressor Cylinders (See Cylinders—Compressor)—

Compressors—Air—
Bessemer Gas Engine Co.
Clark Brothers Co.
Cooper, C. & G., Co.
Gardner Governor Co.
Ingersoll-Rand Co.
Sullivan Machinery Co.

Compressors—Ammonia—
Carbondale Machine Co.
Cooper, C. & G., Co.

Compressors—Direct Connected Motor and Gas Engine Drives
Buffalo Gasolene Motor Co.
Clark Brothers Co.
Cooper, C. & G., Co.
Miller Improved Gas Engine Co.

Compressors—Direct Driven Air and Gas—
Bessemer Gas Engine Co.
Miller Improved Gas Engine Co.

Compressors—Gas—
Bessemer Gas Engine Co.
Chicago Pneumatic Tool Co.
Clark Brothers Co.
Cooper, C. & G., Co.
Hope Engineering & Supply Co.
Ingersoll-Rand Co.
National Transit Pump & Machine Co.
Worthington Pump & Machinery Corp.

Compressors—Oil—Coke—
Porter & Company

Concrete-Hardener and Waterproofer—
Master Builders Co.

Condenser Boxes—
Kaw Steel Construction Co.
Petroleum Iron Works Co.

Condensers—
American Radiator Co.
Chicago Pneumatic Tool Co.
National Gas Products Co.
Ross Heater & Mfg. Co.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.

Controllers—Automatic—
Brown Instrument Co.

Controllers—Liquid Level—
Fisher Governor Co., Inc.
Newton Process Mfg. Co.
Smith Separator Co.

Controllers—Pressure—
Smith Separator Co.

Controllers—Temperature—

Conveying & Elevating Machinery
Brady Conveyors Corp.

Conveyors—Bucket and Belt—
Brady Conveyors Corp.

Conveyors—Pneumatic—
Brady Conveyors Corp.

Conveyors—Portable Belt—
Barber-Greene Co.

Cooling Towers—Atmospheric—
Braun, C. F., & Co.
National Gas Products Co.

Cordage—
Bridgeport Machine Co.
International Supply Co.
Plymouth Cordage Co.

Core Drilling—
Longyear, E. J., Co.

Core Drills—
Elliott Core Drilling Co.

Core Drills—Diamond—
Longyear, E. J., Co.
Sullivan Machinery Co.

Core Drills—Diamonds For—(See Diamonds for Core Drilling)—

Coring Tools—
Reed Roller Bit Co.
Wilson Oil Tools Corp.

Couplings—Flexible—
Nuttall, R. D., & Co.
Victaulic Co. of America.

Couplings—Plain End Pipe—
Dayton Pipe Coupling Co.
Dresser, R. S., Mfg. Co.

Couplings—Seamless Steel—
Harrisburg Pipe & Pipe Bending Co.
Superior Tube Co.

Couplings—Steel for Casing, Line Pipe, Drill Pipe and Tubing—
Dayton Pipe Coupling Co.
Smith, A. O., Corp.

Cracking Processes—
Graver Corp.
Kellogg, M. W., Co.
Universal Oil Products Co.

Crawler Treads—
Belle City Mfg. Co.
Full Crawler Co.

Crown Blocks—
International Derrick & Equipment Co.
Lucey Mfg. Corp.
Moore, Lee C., & Co., Inc.
Parkersburg Rig & Reel Co.

Cups—Composition—
Williamsport Development Co.

Cups—Leather—
Auer, C. A.

Cutters—Pipe—
Borden Co.
Nye Tool & Machine Works.
Trimont Mfg. Co.

Cylinders—Compressor—
Hope Engineering & Supply Co.

Cylinder Stocks—
Barnsdall Refining Co.
Pure Oil Co.
Texas Company, The.

D

Dehydrating Process—
Barnickel, Wm. S., Co.

Dephlegmators—
Graver Corp.
National Gas Products Co.
Newton Process Mfg. Co.
Smith, A. O., Corp.

Depletion Reports—
American Appraisal Co.

Derricks—Steel—
Emsco Derrick & Equip. Co.
International Derrick & Equipment Co.
Marion Mch., Fdy. & Supply Co.
Moore, Lee C., & Co., Inc.
O'Brien Steel Construction Co.
Parkersburg Rig & Reel Co.
Superior Tube Co.

Derricks—Turnbuckle—
National Turnbuckle Derrick Co.

Diamonds—For Core Drilling—
Patrick, R. S.

Die Heads—Automatic Screw Cutting—
Landis Machine Co.

Die Heads—Bolt Threading—
Bignall & Keeler Mch. Works.
Landis Machine Co.

Die Heads—Stationary Pipe Threading—
Bignall & Keeler Mch. Works.
Cox & Sons Co., The.
Landis Machine Co.

Diesel Engines (See Engines)—

Dies—Pipe Threading—
Bignall & Keeler Mch. Works.
Cox & Sons Co., The.
Landis Machine Co.
Nye Tool & Machine Works.

Direct Driven Pumps (See Pumps)

Disc Bits (See Bits—Disc)—

Ditchers—Pipe Line—
Barber-Greene Co.
Buckeye Traction Ditcher Co.

Draw Works—
Lucey Mfg. Corp.
National Supply Co.
Titusville Iron Works Co.

Drillers Hose (See Hose)—

Drilling & Fishing Tools—
Acme Fishing Tool Co.
Baash-Ross Tool Co.
Bovaird & Seyfang Mfg. Co.
Bovaird Supply Co.
Bridgeport Machine Co.
Brown Tool Co., Inc.
Burns Tool Co.
Continental Supply Co.
Cushing, Tim, Tool & Supply Co.
Emsco Derrick & Equip. Co.
General Oil Tools Co.
Hinderliter Tool Co.
Hughes Tool Co.
International Supply Co.
Larkin & Co.
Leidecker Tool Co.
Lucey Mfg. Corp.
Murray Tool & Supply Co.
Oil Well Supply Co.
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Spang & Co.
Star Drilling Machine Co.
U. S. Tool Co.

Drilling Engines—(See Engines)—

Drilling Equipment—
Clark Brothers Co.
Hughes Tool Co.
O'Brien Steel Construction Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Reed Roller Bit Co.
Star Drilling Machine Co.

Drilling Machines—
Leidecker Tool Co.
Oil Well Supply Co.
Star Drilling Machine Co.

Drilling Tools—(See Drilling and Fishing Tools)—

Drills—Portable Air—
Chicago Pneumatic Tool Co.

Drive Shoes—
Bartlesville Supply Co.
Larkin & Co.

Drops and Seats—
Norris Brothers, Inc.

Drums (See Barrels)—

Dynamos—
Westinghouse Electric & Mfg Co.

E

Ejectors—
Penberthy Injector Co.

Electrical Equipment—
Fairbanks-Morse & Co.
Pyle National Co.
Wico Electric Co.

Electric Drilling Equipment—
Lucey Mfg. Corp.
Westinghouse Electric & Mfg Co.

Electric Steel Castings (See Castings—Electric—Steel)—

Elevators—Casing and Tubing—
Bovaird Supply Co.
Bridgeport Machine Co.
Dunn Mfg. Co.
Lucey Mfg. Corp.
Oil Well Supply Co.
Wilson Oil Tools Corp.

Elevators—Rod—
B. & A. Specialty Co.
D. & B. Pump & Supply Co.
Dunn Mfg. Co.

Enamels—
Arco Company, The.
Detroit Graphite Co.
Sherwin-Williams Co.

Engineers—Consulting and Contracting—
Brooks Engineering Corp.
Hope Engineering & Supply Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
National Petroleum Engineering Corp.
Power Specialty Co.
Westcott & Greis.
Widdell Engineering Co.

Engineers—Fire Protection—
Brooks Engineering Corp.
Foamite-Childs Corp.

Engineers—Oil Buildings—
Austin Co.
International Derrick & Equipment Co.

Engineers—Oil Mining—
Ranney Oil Mining Co.

Engineers—Oil Treating—
Barnickel, Wm. S., & Co.
National Gas Products Co.

Engines—Crude Oil—
Continental Supply Co.
Western Machinery Co.

Engines—Diesel—
Bessemer Gas Engine Co.
Busch-Sulzer Bros. Diesel Engine Co.
Foos Gas Engine Co.
McIntosh & Seymour Corp.
Western Machinery Co.
Worthington Pump & Machinery Corp.

Engines—Drilling—
Ajax Iron Works.
Bessemer Gas Engine Co.
Bovaird & Seyfang Mfg. Co.
Brownell Co., The.
Buda Co.
Buffalo Gasolene Motor Co.
Clark Bros. Co.
Climax Engineering Co.
Franklin Valveless Engine Co.
Hercules Motor Corp.
Pattin Bros. Co.
Power Mfg. Co.
Republic Supply Co.
Titusville Iron Works Co.

Engines—Gas—
Bessemer Gas Engine Co.
Buda Co.
Buffalo Gasolene Motor Co.
Chicago Pneumatic Tool Co.
Clark Brothers Co.
Climax Engineering Co.
Continental Supply Co.
Cooper, C. & G., Co.
Emsco Derrick & Equip. Co.
Foos Gas Engine Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hope Engineering & Supply Co.
Ingersoll-Rand Co.
International Supply Co.
Jones, S. M., Co.
Marion Mch., Fdy. & Supply Co.
Miller Improved Gas Engine Co.
National Supply Co.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Pattin Bros. Co.
Reid, Joseph, Gas Engine Co.
Titusville Iron Works Co.
Waukesha Motor Co.
Western Machinery Co.

Engines—Gasoline—
Buda Co.
Buffalo Gasolene Motor Co.
Climax Engineering Co.
Continental Motors Corp.
Fairbanks-Morse & Co.
Hercules Motor Corp.
International Harvester Co. of America.
Waukesha Motor Co.
Western Machinery Co.

Engines—Oil—
Bessemer Gas Engine Co.
De La Vergne Machine Co.
Fairbanks-Morse & Co.
Franklin Valveless Engine Co.
Ingersoll-Rand Co.
International Harvester Co. of America.
McIntosh & Seymour Corp.
National Supply Co.
Oil Well Supply Co.
Power Mfg. Co.
Reid, Joseph, Gas Engine Co.
Western Machinery Co.

Engines—Semi-Diesel, Oil—
Chicago Pneumatic Tool Co.

Engines—Steam—
Ajax Iron Works.
Frick-Reid Supply Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.

Evaporators—
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.

F

Fabricators for Gasoline Plants and Refineries—
National Gas Products Co.
Stearns-Roger Mfg. Co.

Filters—Oil—
Burt Mfg. Co.

Fire Extinguishers—
Foamite-Childs Corp.

Fire Extinguishers — Recharge Service—
Foamite-Childs Corp.

Fishing Tools (See Drilling and Fishing Tools)—

Fittings—Dropped Forged Steel—
Vogt, Henry, Machine Co.

Fittings—Forged Steel—
Central Forging Co.

Fittings—Malleable & Cast Iron—
Bovaird Supply Co.
Crane Co.
Frick-Reid Supply Co.
Walworth Co.

Fittings—Pipe—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.
Gaso Pump & Burner Mfg. Co.
Jarecki Mfg. Co.
Kellogg, M. W., Co.
Kennedy Valve Mfg. Co.
Metric Metal Works.
Oil Well Supply Co.
Reading Steel Casting Co.
Republic Supply Co.
United Iron Works, Inc.
Victaulic Co. of America.
Walworth Co.

Fittings—Pipe Acid Proof—
Duriron Company.

Fittings—Steel—
Dayton Pipe Coupling Co.
Kerotest Mfg. Co.
Ohio Steel Foundry Co.
Walworth Co.

Flanges—Brass, Iron and Steel—
Jefferson Union Co.
Metric Metal Works.
Walworth Co.

Flange Unions—
Dart, E. M., Mfg. Co.
Gaso Pump & Burner Mfg. Co.

Flashlights—
National Carbon Co.

Floating Roofs and Decks—
Chicago Bridge & Iron Works.

Floodlights—
Pyle-National Co.

Forging Billets—
Andrews Steel Co.
Harrisburg Pipe & Pipe Bending Co.
Heppenstall Forge & Knife Co.

Forgings—
Champion Machine & Forging Co.

Fuel Economizers—
Power Specialty Co.

Fuel Oil (See Oil—Fuel)—

Fullers Earth—
Sinclair Refining Co.

G

Gas Holders—
Chicago Bridge & Iron Works.

Gaskets—
McCord Radiator & Mfg. Co.

Gaskets—Fibre—
Durabla Mfg. Co.
Garlock Packing Co.

Gas Masks & Safety Appliances—
Mine Safety Appliance Co.

Gasoline—
Crown Central Petroleum Co.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
Skelly Oil Co.

Gasoline—Natural—
Chestnut & Smith Corp.
National Gas Products Co.
Skelly Oil Co.
Warren Petroleum Co.

Gasoline Plant Equipment—
Bessemer Gas Engine Co.
Clark Brothers Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.
Widdell Engineering Co.

Gas Regulating Casinghead—
Davis, G. M., Regulator Co.
National Gas Products Co.

Gas Scrubbers—
National Gas Products Co.
Newton Process Mfg. Co.

Gauge Glass—High Pressure—
Durabla Mfg. Co.

Gauge Poles—
Marsh Gauge Pole Co.
Missouri Woodworking Co.

Gauges—Automatic Tank—
Brooks Engineering Co.

Gauges—Draft—
Brown Instrument Co.

Gauges—Oil—
Penberthy Injector Co.

Gauges—Pressure and Vacuum—
Bristol Co.
Brown Instrument Co.
Equitable Meter & Mfg. Co.
Foxboro Co., Inc.
Metric Metal Works.

Gauges—Test—
Equitable Meter & Mfg. Co.
Metric Metal Works.

Gear Driven Pumps (See Pumps)

Gears—Cut—
Nuttall, R. D., & Co.

Gears—Reduction—
Emsco Derrick & Equip. Co.
Nuttall, R. D., & Co.

Gears—Reverse—
Emsco Derrick & Equip. Co.

Generators—
Westinghouse Electric & Mfg. Co.

Generators—Acetylene—
Oxweld Acetylene Co.

Generators—Turbine—
Moon Manufacturing Co.
Pyle-National Co.
Westinghouse Electric & Mfg. Co.

Glassware—Chemical for Laboratory Use—
Illinois Glass Co.

Governors—
Equitable Meter & Mfg. Co.
Gardner Governor Co.

Governors—Boiler Feed—
Chaplin-Fulton Mfg. Co.
Fisher Governor Co.

Grating—Steel—
Blaw-Knox Co.

Grey Iron Castings (See Castings)

H

Hammers—Chipping and Calking Pneumatic—
Chicago Pneumatic Tool Co.

Hammers—Riveting Pneumatic—
Chicago Pneumatic Tool Co.

Hangers—Iron and Steel—
Continental Supply Co.
Dodge Mfg. Corp.

Hangers—Tubing—
Hercules Tool Co.

Hatches—Gauges and Thief—
Oil Conservation Engineering Co.

Heat Exchangers—
Carbondale Machine Co.
Griscom-Russell Co.
Hope Engineering & Supply Co.
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.

Heat Interchangers—Fluid—
Braun, C. F., & Co.
Ross Heater & Mfg. Co., Inc.

Hoists—Pneumatic, Geared and Universal—
Chisholm-Moore Mfg. Co.
Yale & Towne Mfg. Co.

Hoists—Portable—
Chisholm-Moore Mfg. Co.
Ford Chain Block Co.
Sullivan Machinery Co.
Wright Mfg. Co.
Yale & Towne Mfg. Co.

Hooks for Rods and Tubing—
B. & A. Specialty Co.
Dunn Mfg. Co.

Hose—
Fenwick-Reddaway Mfg. Co.

Hose—Drillers—
Goodrich, B. F., Rubber Co.
United States Rubber Co.

Hose—Oil Suction and Discharge
Goodrich, B. F., Rubber Co.
United States Rubber Co.

Hose—Rubber—
Goodyear Tire & Rubber Co.
United States Rubber Co.

Hypochlorite of Lime—
Mathieson Alkali Works, Inc.

I

Injectors—
Penberthy Injector Co.

Inspectors—Pipe—
Hunt, Robert W., Co.

Insulation Materials—
General Insulating & Mfg. Co.
Johns-Manville, Inc.

Insurance—Fire—
Oil Insurance Association.

Insurance—Tornado—
Oil Insurance Association.

Iron—Ingot—
American Rolling Mill Co.

J

Jacks—Hydraulic—
Bridgeport Machine Co.

Jacks—Lifting—
Templeton, Kenly & Co., Ltd.

Jacks—Pumping—
American Mfg. Co. of Texas.
American Wells Works.
Bessemer Gas Engine Co.
Braden Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
Kansas City Hay Press Co.
Norris, W. C.
Spang & Co.

Jars—
Arbon, Paul, & Co.
Bridgeport Machine Co.
Spang & Co.

Jar Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

K

Kerosene—
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.

L

Lacquers—
Arco Company, The.
Sherwin-Williams Co.

Lanterns—Electric—
Delta Electric Co.

Lead and Mixed Metal Products—
Eagle-Picher Lead Co.
National Lead Co.

Lead in Oil—
Eagle-Picher Lead Co.
National Lead Co.

Lead Wool and Containers—
Eagle-Picher Lead Co.

Lighting Equipment—
Pyle-National Co.
Westinghouse Electric & Mfg. Co.

Litharge—
Eagle-Picher Lead Co.
National Lead Co.

Loaders—Trucks—
Barber-Greene Co.

Long Distance Telephone—
American Telephone & Telegraph Co.

Lubricating Devices—
McCord Radiator & Mfg. Co.

Lubricators—
Ajax Iron Works.
Lunkenheimer Co.

Lubricators—Force Feed—
Hills-McCanna Co.
McCord Radiator & Mfg. Co.
Manzel Brothers Co.

M

Machine Tools—
Ryerson, Jos. T., & Sons, Inc.

Manholes—Tank—
Brooks Engineering Corp.

Manifolds—
Reid, Joseph, Gas Engine Co.

Meters—Gas—
Equitable Meter & Mfg. Co.
Foxboro Co., Inc.
Metric Metal Works.
Pittsburgh Meter Co.
Roots, P. H. & F. M., Co.
Westcott & Greis.

Meters—Electric—
Brown Instrument Co.

Meters—Gasoline—
Pittsburgh Meter Co.

Meters—Oil—
Pittsburgh Meter Co.

Molded Goods—Rubber—
Garlock Packing Co.
Goodyear Tire & Rubber Co.

Motors—Electric—
Fairbanks-Morse & Co.
Westinghouse Electric & Mfg. Co.

Motors—Gasoline (See Engines—Gasoline)—

N

Naphtha—
Pure Oil Co.

Natural Gasoline (See Gasoline—Natural)—

Natural Gasoline Plant Equipment—
Campbell, J. A.
Cooper, C. & G., Co.
Griscom-Russell Co.
National Gas Products Co.
Roots, P. H. & F. M., Co.
Ross Heater & Mfg. Co., Inc.
Smith Separator Co.
Westcott & Greis.

Nitrogen—
Linde Air Products Co.

Nozzles—Spray—
Power Plant Equipment Co.

O

Oil and Gas Pipe Line Construction—
Hope Engineering & Supply Co.

Oil Burners (See Burners—Oil)—

Oil Field Equipment—
Baker Casing Shoe Co.
Bridgeport Machine Co.
Gaso Pump & Burner Mfg. Co.
International Derrick & Equipment Co.
Iron King Mfg. Co.
Kaw Steel Construction Co.
National Supply Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Reid, Joseph, Gas Engine Co.
Republic Supply Co.
Simplex Equipment Co.
Trumble Gas Trap Co.

Oil—Fuel—
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
Texas Company, The.

Oil—Gas—
Crown Central Petroleum Corp.
Gulf Refining Co.
Pure Oil Co.
Sinclair Refining Co.
Texas Company, The.

Oil—Lubricating—
Barnsdall Refining Co.
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Humble Oil & Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
Skelly Oil Co.
Texas Company, The.

Oil—Tractor—
Barnsdall Refining Co.
Gulf Refining Co.
Pure Oil Co.
Skelly Oil Co.

Oiling Devices—
Lunkenheimer Co.

Oil Meters (See Meters)—

Oil Piping Equipment (See Fittings)—

Oil Reclaiming Process—
Barnickel, Wm. S., & Co.

Oil Well Cementing—
Halliburton Oil Well Cementing Co.

Oil Well Tools—
D. & B. Pump & Supply Co.
Hinderliter Tool Co.
Reed Roller Bit Co.
Titusville Forge Co.
U. S. Tool Co.

Over Shots—
Reed Roller Bit Co.
Regan Forge & Engineering Co.

Oxygen—
Linde Air Products Co.

P

Packer Release—
Acme Fishing Tool Co.

Packers—
Goodyear Tire & Rubber Co.
Guiberson Corp.
Larkin & Co.
Layne & Bowler Co.
Meier, E. C., Lubricating Co.
Oil Well Supply Co.
Regan Forge & Engineering Co.
Spang & Co.
United States Rubber Co.

Packing—
Crane Packing Co.
Durabla Mfg. Co.
Goodrich, B. F., Rubber Co.
Imperial Belting Co.
Johns-Manville, Inc.

Packing—Metallic—
Crane Packing Co.
Garlock Packing Co.

Paints—
Aluminum Co. of America.
American Asphalt Paint Co.
Arco Company, The.
Detroit Graphite Co.
Dixon, Joseph, Crucible Co.
Du Pont de Nemours, E. I. & Co., Inc.
Eagle-Picher Lead Co.
Eclipse Paint & Mfg. Co.
Hill, Hubbell & Co.
National Lead Co.
Sherwin-Williams Co.
St. Louis Surfacer & Paint Co.

Pipe—Cast Iron—
Greenspon's Jos., Sons Iron & Steel Co.
International Supply Co.
U. S. Cast Iron Pipe & Fdy. Co.

Pipe—Lead Chemical and Antimonial—
Eagle-Picher Lead Co.
National Lead Co.

Pipe—Steel—
Central Tube Co.
Continental Supply Co.
Greenspon's Jos., Sons Iron & Steel Co.
Jarecki Mfg. Co.
Kellogg, M. W., Co.
Murray Tool & Supply Co.
National Supply Co.
National Tube Co.
Republic Iron & Steel Co.
Ryerson, Jos. T., & Sons, Inc.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.
Taubman Supply Corp.
Wheeling Steel Corp.

Pipe—Wrought Iron—
Byers, A. M., Co.
Frick-Reid Supply Co.
Greenspon's, Jos., Sons Iron & Steel Co.
Oil Well Supply Co.
Reading Iron Co.
South Chester Tube Co.
Superior Tube Co.
Taubman Supply Corp.

Pipe and Nipple Threading Machines—
Bignall & Keeler Mch. Works.
Cox & Sons Co., The.
Landis Machine Co.
Ryerson, Jos. T., & Sons, Inc.
Standard Engineering Co.

Pipe Clamps (See Clamps—Pipe)

Pipe Grips—
Larkin & Co.

Pipe Headers—
National Tube Co.
Newton Process Mfg. Co.

Pipe Line Coatings—
Hill, Hubbell & Co.

Pipe Line Construction Tools—
National Transit Pump & Machine Co.

Pipe Line Equipment—
Gaso Pump & Burner Mfg. Co.

Pipe Screwing Machines—
Buckeye Traction Ditcher Co.

Pipe Straightening Machines—
W-K-M Co., Inc.

Pipe Suspension Device—
Stearns-Roger Mfg. Co.

Pipe Threaders—Power—
Williams Tool Corp.

Pipe Tools—
Armstrong Brothers Tool Co.
Nye Tool & Machine Works.
Ridge Tool Co.
Walworth Co.

Piping—Fabricated—
Midwest Piping & Supply Co.

Piping—Hard Rubber—
United States Rubber Co.

Piping—Steel & Iron—
Crane Co.
Greenspon's, Jos., Sons Iron & Steel Co.
Power Piping Co.

Pistons—
Guiberson Corp.
Hepenstall Forge & Knife Co.

Pistons—Expansion—
Wilson Oil Tools Corp.

Pistons—Suish Pump—
Guiberson Corp.

Plugs—Bottom Water—
Guiberson Corp.

Pre-Heaters—
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.

Preservatives—Asphalt—
American Asphalt Paint Co.

Pulleys—Wood, Iron and Steel—
Continental Supply Co.
Dodge Mfg. Co.

Pulling Machines—
Iron King Mfg. Co.
National Supply Co.
Safety Pulling Machine Co.

Pumpers—Long Stroke—
Farley Machine Co.

Pumping and Pulling Motors—Electric—
Westinghouse Electric & Mfg. Co.

Pumping Equipment—
American Well Works.
Axelson Machine Co.
Byron Jackson Pump Mfg. Co., Inc.
D. & B. Pump & Supply Co.
Farley Machine Co.
Goulds Pumps, Inc.
Jones, S. M., Co.
Myers, F. E., & Bros., Co.
Northrup Equipment Co.
Oil Well Supply Co.
Prescott Co.
Ratigan, J. P., Co.
Waukesha Motor Co.

Pumping Gear Units—
Nuttall, R. D., & Co.

Pumping Powers—
Bessemer Gas Engine Co.
Buda Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
Kansas City Hay Press Co.
Marion Mch., Fdy. & Supply Co.
National Supply Co.
Oil Well Supply Co.
Pattin Bros. Co.
Reid, Joseph, Gas Engine Co.
Spence Machine Co.
Titusville Iron Works Co.

Pumps—Acid Proof—
Duriron Company.

Pumps—Boiler Feed—
Axaj Iron Works.
Byron Jackson Pump Mfg. Co., Inc.
Fairbanks-Morse & Co.
Gardner Governor Co.
Goulds Pumps, Inc.
Oil Well Supply Co.
Smith Separator Co.

Pumps—Centrifugal—
American Well Works.
Byron Jackson Pump Mfg. Co., Inc.
Fairbanks-Morse & Co.
Goulds Pumps, Inc.
Smith Separator Co.
Worthington Pump & Machinery Corp.

Pumps—Direct Driven—
Bessemer Gas Engine Co.
Smith Separator Co.

Pumps—Electric—
Prescott Co.
Smith Separator Co.

Pumps—Fuel Oil Service—
Blackmer Pump Co.
Goulds Pumps, Inc.
Northern Fire Apparatus Co.
Smith Separator Co.

Pumps—Fuel Oil Transfer—
Blackmer Pump Co.
Byron Jackson Pump Mfg. Co., Inc.

Pumps—Gasoline and Oil for Filling Stations—
Gilbert & Barker Mfg. Co.

Pumps—Gear Driven—
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
Prescott Co.
Smith Separator Co.

Pumps—Hot Oil—
Blackmer Pump Co.
Byron Jackson Pump Mfg. Co., Inc.
Goulds Pumps, Inc.
Smith Separator Co.

Pumps—Pipe Line—
Byron Jackson Pump Mfg. Co., Inc.
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
National Transit Pump & Machine Co.
Prescott Co.
Worthington Pump & Machinery Corp.

Pumps—Portable—
Gaso Pump & Burner Mfg. Co.

Pumps—Power—
Fairbanks-Morse & Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
Myers, F. E., Bro. & Co.
National Transit Pump & Machine Co.
Prescott Co.
Smith Separator Co.
Waukesha Motor Co.

Pumps—Refinery—
Blackmer Pump Co.
Byron Jackson Pump Mfg. Co., Inc.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
National Transit Pump & Machine Co.
Northern Fire Apparatus Co.
Smith Separator Co.

Pumps—Rotary—
Blackmer Pump Co.
Goulds Pumps, Inc.
Northern Fire Apparatus Co.
Roots, P. H. & F. M., Co.

Pumps—Sand—
Bridgeport Machine Co.
Larkin & Co.
Smith Separator Co.

Pumps—Slush—
Gardner Governor Co.

Pumps—Steam—
Fairbanks-Morse & Co.
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Prescott Co.
Smith Separator Co.

Pumps—Suction—
Gaso Pump & Burner Mfg. Co.

Pumps—Vacuum—
Bessemer Gas Engine Co.
Chicago Pneumatic Tool Co.
Clark Brothers Co.
Gaso Pump & Burner Mfg. Co.
Miller Improved Gas Engine Co.
Roots, P. H. & F. M., Co.
Ross Heater & Mfg. Co., Inc.
Smith Separator Co.

Pumps—Water—
American Well Works.
Byron Jackson Pump Mfg. Co., Inc.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
Northern Fire Apparatus Co.
Prescott Co.
Smith Separator Co.

Pyrometers—
Brown Instrument Co.
Republic Flow Meters Co.

R

Ratchet Pipe Cutters—
Toledo Pipe Threading Machine Co.

Ratchet Pipe Threaders—
Nye Tool & Machine Works.
Toledo Pipe Threading Machine Co.

Ratchet Reamers—
Nye Tool & Machine Works.

Ratchet Stocks and Dies—
Nye Tool & Machine Works.
Toledo Pipe Threading Machine Co.

Receiving Boxes—
Reid, Joseph, Gas Engine Co.

Recorders—Differential Pressure—
Equitable Meter & Mfg. Co.
Metric Metal Works.

Refinery Equipment—
American Radiator Co.
Blaw-Knox Co.
Braun, C. F., & Co.
Carbondale Machine Co.
Chicago Bridge & Iron Works.
Graver Corp.
Griscom-Russell Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
Newton Process Mfg. Co.
Petroleum Appliance Co.
Petroleum Iron Works Co.
Power Piping Co.
Power Specialty Co.
Reid, Joseph, Gas Engine Co.
Ross Heater & Mfg. Co., Inc.
Ross-Meehan Foundries.
Smith, A. O., Corp.
Smith Separator Co.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.
United Iron Works, Inc.
Universal Oil Products Co.
Vogt, Henry, Machine Co.
Walsh & Weidner Boiler Co.
Westcott & Greis.
Widdell Engineering Co.

Refractories—Furnace, Stills and Baffles—
National Gas Products Co.

Refrigerating Machinery—
Carbondale Machine Co.
United Iron Works, Inc.
Vogt, Henry, Machine Co.

Regulators—
Fisher Governor Co.
Gilfillan Machine Works.
Smith Separator Co.

Regulators—Gas—
Chaplin-Fulton Mfg. Co.
Davis, G. M., Regulator Co.
Equitable Meter & Mfg. Co.
Fisher Governor Co.
Metric Metal Works.
National Gas Products Co.
Smith Separator Co.

Rental Service—
Bridgeport Machine Co.

Reversible Clutches—
Bessemer Gas Engine Co.

Rig Irons—
International Supply Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.

Rigs—Drilling, All Steel—
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.

Rigs—Portable Drilling—
National Supply Co.
National Turnbuckle Derrick Co.
Star Drilling Machine Co.

Rod Guides—
Meier, E. C., Lubricating Co.

Rods—Gauge—
Missouri Woodworking Co.

Rods—Polish—
Jones, S. M., Co.

Rods—Pull—
Axelson Machine Co.
Columbus Sucker Rod Co.
Jones, S. M., Co.
Sheffield Steel Corp.

Rods—Sucker—
Axelson Machine Co.
Columbus Sucker Rod Co.
D. & B. Pump & Supply Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.
Sheffield Steel Corp.

Rods—Valve—
Jones, S. M., Co.

Roofing—Asbestos—
Johns-Manville, Inc.

Roofing—Galvanized Iron—
American Rolling Mill Co.

Rope Socket Metal—
Eagle-Picher Lead Co.

Rope—Manila—
Ajax Rope Co., Inc.
Bovaird Supply Co.
Republic Supply Co.

Rope—Wire—
Ajax Rope Co., Inc.
Bovaird Supply Co.
Bridgeport Machine Co.
Broderick & Bascom Rope Co.
International Supply Co.
Jarecki Mfg. Co.
Wickwire-Spencer Steel Corp.
Leschen, A., & Sons, Rope Co.
Williamsport Wire Rope Co.

Rotary Bit Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

Rotary Drilling Equipment—
Emsco Derrick & Equip. Co.
Frick-Reid Supply Co.
International Derrick & Equipment Co.
Link-Belt Co.
Lucey Mfg. Co.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.
Titusville Iron Works Co.

Rotary Lines (See Rope—Wire)—

Rotary Post—
Reed Roller Bit Co.

Rotary Tool Joints—
Bartlesville Supply Co.
Hughes Tool Co.

Rust Preventatives—
Dearborn Chemical Co.
Eagle-Picher Lead Co.

S

Sand Lines—Manila—
Ajax Rope Co., Inc.
Plymouth Cordage Co.

Sand Lines—Wire—
Ajax Rope Co., Inc.
Broderick & Bascom Rope Co.
Hazard Mfg. Co.
Wickwire-Spencer Steel Corp.

Screens—Oil Well—
Layne & Bowler Co.

Screens—Water Well—
Layne & Bowler Co.

Screws Temper—
Burns Tool Co.

Securities—Oil—
Pforzheimer, Carl H., & Co.

Separators—Centrifugal—
Miller, Max B., & Co.

Separators—Gas and Oil—
Smith Separator Co.

Separators—Steam—
Volz Engineering Equipment Co.

Sheet Lead—Chemical and Antimonial —
Eagle-Picher Lead Co.

Sheets —Corrugated, Black and Galvanized—
American Rolling Mill Co.
American Sheet & Tin Plate Co.
Byerson, Jos. T., & Son, Inc.
United Alloy Steel Corp.

Sheets—Iron—
American Rolling Mill Co.

Sheets—Steel—
American Rolling Mill Co.
American Sheet & Tin Plate Co.
Sheffield Steel Corp.
United Alloy Steel Corp.

Shingles—Asbestos—
Johns-Manville, Inc.

Sliding—Galvanized Iron—
American Rolling Mill Co.

Sleeves—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.

Sleeves—Split—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.

Smoke Stacks—
Donovan Boiler Works.

Snuffers—Fire—
Simplex Equipment Co.

Sockets—
Acme Fishing Tool Co.
Bridgeport Machine Co.
Spang & Co.

Sockets—Sucker Rod—
Guiberson Corp.

Sockets—Swivel—
Arbon, Paul & Co.

Sockets—Wire Rope—
Chicago Steel Foundry Co.

Soda Ash—
Mathieson Alkali Works, Inc.

Soda—Caustic—
Mathieson Alkali Works, Inc.

Solders—Bar and Wire—
Eagle-Picher Lead Co.
Hoyt Metal Co.

Spark Plugs—
Mosler Metal Products Corp.

Spears—
Acme Fishing Tool Co.
Brown Tool Co., Inc.

Sprockets—Power Transmission—
Ajax Iron Works
Chain Belt Co.

Stands—Vise—
Nye Tool & Machine Works

Steel—All Kinds—
Ryerson, Jos. T., & Son, Inc.

Steel—Alloy—
Central Steel Co.
Timken Roller Bearing Co.
United Alloy Steel Corp.

Steel—Bit—
Central Steel Co.
United Alloy Steel Corp.

Steel—Hot Rolled Strip—
Central Steel Co.

Steel—Special—
Andrews Steel Co.
Central Steel Co.
United Alloy Steel Corp.

Steel Fabricators—Structural—
Austin Co.
Braden Co.
Graver Corp.
International Derrick & Equipment Co.

Steel Pitmans—
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.

Steel Plate Construction—
Chicago Bridge & Iron Works
Graver Corp.
Kaw Steel Construction Co.
Pennsylvania Engineering Works
Petroleum Iron Works Co.
Vogt, Henry, Machine Co.

Steel Wheel and Tug Rims—
International Derrick & Equipment Co.

Still Insulation—
Celite Products Co.

Stills—
Blaw-Knox Co.
Graver Corp.
Kaw Steel Construction Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
Newton Process Mfg. Co.
Petroleum Iron Works Co.
Smith, A. O., Corp.
Vogt, Henry, Machine Co.
Widdell Engineering Co.

Stills—Tubular—
Power Specialty Co.

Stocks and Dies—
Borden Co.
Nye Tool & Machine Works
Toledo Pipe Threading Machine Co.

Stuffing Boxes—
Axelson Machine Co.
Kansas City Hay Press Co.

Sulphuric Acid—
Eagle-Picher Lead Co.

Superheaters—Steam—
Power Plant Equipment Co.
Power Specialty Co.

Swabs—
Arbon, Paul, & Co.
Burt Corporation
Guiberson Corp.
Simplex Equipment Co.

Swedge Nipples—
Dresser, S. R., Mfg. Co.
Harrisburg Pipe & Pipe Bending Co.

Swing Line Equipment—
Brooks Engineering Corp.

Swivels—
Layne & Bowler Co.
Lucey Mfg. Corp.
Titusville Iron Works Co.

T

Tachometers—
Brown Instrument Co.

Tank Equipment—
Brooks Engineering Corp.
Oil Conservation Engineering Co.

Tank Insulation—
Celite Products Co.

Tanks—Bolted—
Butler Mfg. Co.
Columbian Steel Tank Co.
Maloney Tank Mfg. Co.
Parkersburg Rig & Reel Co.

Tanks—Bulk Station—
Butler Mfg. Co.
Graver Corp.

Tanks—Cylindrical—
Graver Corp.
Petroleum Iron Works Co.

Tanks—Elevated Steel—
Chicago Bridge & Iron Works
Graver Corp.

Tanks—Field Storage—
American Car & Foundry Co.
Donovan Boiler Works
Graver Corp.
Kaw Steel Construction Co.
Kewanee Boiler Co.
Maloney Tank Mfg. Co.
Petroleum Iron Works Co.
Pittsburgh-Des Moines Steel Co.
Riter-Conley Co.
United Iron Works, Inc.

Tanks—Horizontal Storage—
Graver Corp.
Kaw Steel Construction Co.
Maloney Tank Mfg. Co.

Tanks—Run Down—
Chicago Bridge & Iron Works
Donovan Boiler Works
Graver Corp.
Kaw Steel Construction Co.
Newton Process Mfg. Co.

Tanks—Steel Storage—
Chicago Bridge & Iron Works

Tanks—Truck—
Butler Mfg. Co.
Columbian Steel Tank Co.

Tanks—Underground—
Butler Mfg. Co.
Gilbert & Barker Mfg. Co.
Graver Corp.
Kewanee Boiler Co.
Pittsburgh-Des Moines Steel Co.

Tanks—Welded—
Chicago Bridge & Iron Works
Graver Corp.
Pennsylvania Engineering Works

Taper Taps—
Hughes Tool Co.

Tapes—Measuring for Oil Gauging—
Lufkin Rule Co.
States Engineering Co.

Thermometers—Indicating and Recording—
American Schaeffer & Budenberg Corp.
Bristol Co.
Brown Instrument Co.
Foxboro Co., Inc.

Thermometers—Resistance—
Brown Instrument Co.

Threading Machines—
Bignall & Keeler Machine Wks.
Cox & Sons Co., The
Landis Machine Co.

Thread Protectors—
Spang & Co.

Tires—Automobile—
Continental Supply Co.

Tires—Pneumatic & Solid—
Kelly-Springfield Tire Co.

Tires—Truck—
Kelly-Springfield Tire Co.

Tongs —
Bridgeport Machine Co.
Wilson Oil Tools Corp.

Tongs—Back Up—
Williams, J. H., & Co.

Tongs—Break Out—
Reed Roller Bit Co.
Williams, J. H., & Co.

Tongs—Casing—
Dunn Mfg. Co.
Guiberson Corp.

Tongs—Chain Pipe—
Armstrong Bros. Tool Co.
Williams, J. H., & Co.

Tongs—Pipe—
National Transit Pump & Machine Co.

Tongs—Rotary—
Dunn Mfg. Co.

Tongs—Tool Joint—
Guiberson Corp.
Hughes Tool Co.
Reed Roller Bit Co.

Tongs—Tubing—
Dunn Mfg. Co.

Tool Chests—Pipe—
Nye Tool & Machine Works

Tool Joints—
Bridgeport Machine Co.
Federal Supply Co.
Hughes Tool Co.
Lucey Mfg. Corp.
Oil Well Supply Co.
Reagan Forge & Engineering Co.

Torches—
Oxweld Acetylene Co.

Towers—
Graver Corp.

Tractors—
Cleveland Tractor Co.
International Harvester Co. of America.

Trailers—
Spencer Trailer Co.

Transmission Belt—Rubber—
Goodrich, B. F., Rubber Co.
United States Rubber Co.

Transmission Lining—
Stanley Belting Corp.

Traveling Blocks—
Lucey Mfg. Corp.
Reagan Forge & Engineering Co.
Wright Mfg. Co.

Trenchers—Vertical Boom—
Barber-Greene Co.

Trucks—Motor—
Ford Motor Co.
General Motors Truck Co.
Graham Brothers
International Harvester Co. of America.

Tubes—Boiler, Charcoal Iron—
Byers, A. M., Co.
Reading Iron Co.

Tubes—Boiler Steel—
Continental Supply Co.
National Tube Co.
Ryerson, Jos. T., & Sons, Inc.

Tubing—
Babcock & Wilcox Tube Co.
Byers, A. M., Co.
Central Tube Co.
Continental Supply Co.
National Tube Co.
Pittsburgh Steel Products Co.
Reading Iron Co.
Republic Iron & Steel Co.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.
Wheeling Steel Corp.

Tubing Catchers—
Dunn Mfg. Co.
Guiberson Corp.

Tubing Protectors (See Rod Guides)—

Tubular Goods—
Babcock & Wilcox Tube Co.
Central Tube Co.
Continental Supply Co.
Oil Well Supply Co.
Pittsburgh Steel Products Co.
Republic Iron & Steel Co.
Spang, Chalfant & Co., Inc.
Wheeling Steel Corp.

Tubular Goods—Wrought Iron—
Byers, A. M., Co.
Reading Iron Co.

Turbines for Lighting Equipment
Lucey Mfg. Corp.
Westinghouse Electric & Mfg. Co.

U

Underreamer Body Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

Underreamers—
Bridgeport Machine Co.
Brown Tool Co., Inc.
Guiberson Corp.
Wilson Oil Tools Corp.

Unions—
Central Forging Co.
Dart, E. M., Mfg. Co.
Jefferson Union Co.

V

Valuations—
American Appraisal Co.

Valves—Blow-Off—
Homestead Valve Mfg. Co.
Merco Norstrom Valve Co.

Valves—Brass & Bronze—
Homestead Valve Mfg. Co.
Lunkenheimer Co.
Reading Steel Casting Co.
Walworth Co.

Valves—Cast Steel—
Chapman Valve Mfg. Co.
Homestead Valve Mfg. Co.
Walworth Co.

Valves—Check—
Gaso Pump & Burner Mfg. Co.
Lunkenheimer Co.
Walworth Co.

Valves—Drop Forged Steel—
Edwards Valve & Mfg. Co.
Vogt, Henry, Machine Co.

Valves—Gate—High and Low Pressure—
Chapman Valve Mfg. Co.
Crane Co.
Darling Valve & Mfg. Co.
Kennedy Valve Mfg. Co.
Kerotest Mfg. Co.
Ludlow Valve Mfg. Co.
Lunkenheimer Co.
Murray Tool & Supply Co.
Powell, Wm., Co.
Walworth Co.

Valves—Iron—
Chapman Valve Mfg. Co.
Lunkenheimer Co.
Merco Nordstrom Valve Co.
Reading Steel Casting Co.
Walworth Co.

Valves—Metal Pump—
Durabla Mfg. Co.

Valves—Pump—
Garlock Packing Co.
United States Rubber Co.

Valves—Relief—Supersensitive—
Davis, G. M., Regulator Co.

Valves—Steel—
Chapman Valve Mfg. Co.
Edward Valve Mfg. Co.
Kerotest Mfg. Co.
Lunkenheimer Co.
Metric Metal Works
Powell, Wm., Co.
Reading Steel Casting Co.
Walworth Co.

Valves—Tank Vent —
Brooks Engineering Corp.
Oil Conservation Engineering Co.

Valves—Working Barrel—
Atlas Ball Co.
Axelson Machine Co.
D&B Pump & Supply Co.

Hough, Charles N., Mfg. Co.
Northrup Equipment Co.
Oil Well Supply Co.

Varnishes—
Arco Company, The
Detroit Graphite Co.
Sherwin-Williams Co.

Ventilators—Roof—
Burt Mfg. Co.

Vises—Bench—
Nye Tool & Machine Works

Vises—Pipe—
Nye Tool & Machine Works

Vises—Post—
Nye Tool & Machine Works

W

Wagons—Truss Wheel—
Athey Truss Wheel Co.

Walking Beams—Steel—
Emsco Derrick & Equipment Co
Moore, Lee C., & Co., Inc.

Water Cooling Systems—
Power Plant Equipment Co.

Waterproofings—Concrete—
Master Builders Co.

Waterproofing Materials—
Celite Products Co.

Water Softeners and Filters—
Butler Mfg. Co.
Graver Corp.

Wax—
Barnsdall Refining Co.
Gulf Refining Co.
Pure Oil Co.

Weight Indicators—
Hughes Tool Co.

Welding Accessories—Electric—
Wilson Welder & Metals Co.

Welding and Cutting Apparatus—
Oxweld Acetylene Co.

Welding Machines—Electric—
Wilson Welder & Metals Co.

Welding Supplies—
Oxweld Acetylene Co.

Welding Wire—
Frick-Reid Supply Co.
Oxweld Acetylene Co.
Wilson Welder & Metals Co.

Well Shooting—
Eastern Torpedo Co.
Kinley, M. M.
Zero Hour Torpedo Co.

Wheels—Pipe Cutter—
Nye Tool & Machine Works

Winches—
Braden Co.
Brooks Engineering Co.
Oil Conservation Engineering Co.

Wire Lines (See Cables—Steel—

Wood Patterns and Models—
Gaso Pump & Burner Mfg. Co.

Working Barrels—
Axelson Machine Co.
D&B Pump & Supply Co.
D. & N. Specialty Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hough, Charles N., Mfg. Co.
McGregor, Working Barrel Co
Norris, W. C.
Northrup Equipment Co.
Oil Well Supply Co.

Wrenches—Closet Spuds—
Nye Tool & Machine Works

Wrenches—Drop Forged—
Williams, J. H., & Co.

Wrenches—Pipe—
Trimont Mfg. Co.
Walworth Co.

Wrenches—Ratchet—
Dresser, S. R., Mfg. Co.
Nye Tool & Machine Works

Z

Zinc Oxide—
Eagle-Picher Lead Co.

Oklahoma-Kansas and Eastern Pipeline Report

OKLAHOMA-KANSAS PIPELINE STATEMENT FOR AUGUST

Runs

	Month	Daily Av.
*Prairie Pipe Line Co.	3,999,000	129,000
Gulf Pipe Line Co.	1,296,792	41,832
Texas Pipe Line Co.	632,499	20,403
Magnolia Petroleum Co.	1,116,864	36,028
Empire Pipe Line Co.	728,753	23,508
Cosden Pipe Line Co.	833,167	26,876
Sinclair Pipe Line Co.	1,921,535	61,985
*Other lines	7,812,000	252,000
Total August	18,340,610	591,632
Total July	18,271,500	589,403
Difference	68,110	2,229

Shipments

	Month	Daily Av.
*Prairie Pipe Line Co.	4,005,485	129,209
Gulf Pipe Line Co.	1,248,976	40,289
Texas Pipe Line Co.	789,840	25,479
Magnolia Petroluem Co.	1,373,981	44,322
Empire Pipe Line Co.	933,347	30,108
Cosden Pipe Line Co.	952,263	30,718
†Sinclair Pipe Line Co.	2,636,726	85,056
*Other lines	7,967,000	257,000
Total August	19,907,618	642,181
Total July	19,785,635	638,246
Difference	111,983	3,935

Stocks

*Prairie Oil & Gas Co.	27,400,000
*Prairie Pipe Line Co.	2,000,000
Gulf Pipe Line and Gypsy Oil	6,620,200
The Texas Company	2,893,695
Magnolia Petroleum Co.	3,904,202
Empire Pipe Line Co.	2,424,622
Cosden Pipe Line Co.	1,910,722
*Sinclair Crude Oil Purchasing Co.	17,620,000
Carter Oil Co.	12,646,875
*Other lines	9,280,000
Total August	86,700,316
Total July	87,649,450
Difference	949,134

*Estimated.
†Sinclair shipments also include Texas and Wyoming crude oil.
Note: Stocks do not include 4,200,000 bbls. of crude oil held in storage on private tank farms and leases.

EASTERN PIPE LINES

Runs From Wells

In the following table will be found the regular receipts from wells by various pipelines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for July and August:

	July, '26	Aug., '26
Nat. Transit	163,355.45	161,323.78
S. W. Pa. P. L.	101,686.03	96,367.93
Eureka P. L.	392,989.67	381,142.94
Buckeye P. L. (Macksburg)	306,269.80	307,707.87
Buckeye P. L. (Cleveland)	11,170.47	11,268.78
Buckeye P. L. (Lima, etc.)	137,149.47	128,103.04
Indiana P. L.	10,828.41	10,825.64
Cumberland P. L.	282,211.58	278,950.07
N. Y. Transit	21,334.18	20,228.51
Tidewater P. L.	168,664.93	166,918.60
Pure Oil Co.	176,480.50	168,350.74
Emery P. L.	53,064.83	53,942.07
Indian Ref.	104,990.12	103,137.03
Paragon Dev.	22,718.44	22,043.09
Pittsburgh P. L.	6,486.24	5,960.11
Total	1,959,400.15	1,916,270.20
Daily average	63,206.46	61,815.17

Note—Indian Refining Co. also reported other receipts of 255,477.05 bbls. Paragon Refining Co. had other receipts of 154,122.42 bbls. Paragon Development had other receipts of 1,538.22 bbls. Pure Oil had other receipts of 72,926.96 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipelines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for July and August:

	July, '26	Aug., '26
Nat. Transit	370,891.32	419,519.29
S. W. Pa. P. L.	409,458.00	407,494.63
Eureka P. L.	194,592.54	206,253.08
Buckeye P. L. (Macksburg)	154,972.89	139,988.47
Buckeye P. L. (Cleveland)	1,408.19	727.93
Buckeye P. L. (Lima, etc.)	896,654.71	787,040.76
Indiana P. L.	995,699.54	996,002.96
Cumberland P. L.	168,426.65	149,487.18
Southern P. L.		2,461.03
N. Y. Transit	648,783.66	437,982.40
Northern P. L.	185,783.37	199,543.86
Tidewater P. L.	107,643.02	130,278.71
Pure Oil Co.	238,473.30	259,867.54
Emery P. L.	54,161.96	56,844.78
Paragon Ref.	159,136.74	134,578.87
Indian Ref.	372,128.62	357,390.83
Paragon Dev.	24,924.64	18,580.37
Pittsburgh P. L.	7,169.75	5,737.74
Total	4,989,308.90	4,709,789.43
Daily average	160,945.45	151,928.69

Gross Stocks

The gross stocks held by various pipelines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky, at the close of July and August were as follows:

	July, '26	Aug., '26
Nat. Transit	1,053,770.84	1,095,592.26
S. W. Pa. P. L.	683,787.99	644,407.20
Eureka P. L.	1,483,121.26	1,426,004.84
Buckeye P. L. (Macksburg)	415,112.82	461,200.92
Buckeye P. L. (Cleveland)	85,333.91	93,451.86
Buckeye P. L. (Lima, etc.)	2,428,415.17	2,585,923.06
Indiana P. L.	576,702.06	578,735.80
Cumberland P. L.	633,819.77	601,941.96
Southern P. L.	476,270.69	404,780.18
N. Y. Transit	822,714.93	748,135.27
Northern P. L.	433,011.93	385,641.31
Pure Oil Co.	450,205.94	429,758.51
Emery P. L.	37,324.53	34,677.04
Paragon Ref.	86,255.80	65,343.53
Indian Ref.	110,400.30	109,296.55
Paragon Dev.	4,813.95	9,505.05
Pittsburgh P. L.	4,124.64	4,541.24
Total	9,734,686.53	9,668,946.98
Increase	148,782.41	*65,739.55

*Decrease.

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipelines at the close of July and August showing the gross stocks of the above fields:

	July, '26	Aug., '26
Pennsylvania	4,047,418.29	4,021,829.40
Lima	859,783.19	826,740.17
Kentucky	1,249,214.91	1,185,429.48
Mid-Continent	3,502,567.49	3,593,693.56
Illinois	75,702.65	41,254.37
Total	9,734,686.53	9,668,946.98

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1923	1924	1925	1926
January	75,790	62,638	56,831	55,630
February	71,092	68,023	60,606	60,394
March	76,592	68,721	60,575	61,644
April	77,666	71,058	62,052	63,919
May	77,365	63,942	59,217	60,580
June	77,593	63,230	61,270	64,131
July	71,879	64,208	62,639	63,206
August	76,910	59,942	59,686	61,815
September	72,358	62,930	62,510	.....
October	76,266	64,976	60,995	.....
November	70,762	56,282	59,350	.....
December	69,271	55,814	57,974	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1923	1924	1925	1926
January	171,067	145,518	157,889	156,056
February	164,219	148,732	160,863	159,488
March	185,487	147,098	154,591	150,239
April	170,751	147,611	151,429	152,371
May	177,102	134,997	146,995	160,988
June	173,598	143,010	149,467	160,257
July	168,330	124,187	161,338	160,945
August	142,776	123,120	161,730	151,929
September	137,266	127,325	156,719	.....
October	134,597	123,170	145,388	.....
November	131,426	124,400	143,582	.....
December	139,909	151,392	150,162	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines, at the close of each month for the past three years:

	1924	1925	1926
January	12,907,202	11,353,276	9,859,176
February	11,844,068	11,192,924	9,579,354
March	10,906,762	11,154,297	9,438,293
April	10,922,742	11,062,082	9,805,581
May	11,335,309	11,207,562	9,631,757
June	11,544,204	11,093,796	9,585,904
July	12,062,361	11,067,453	9,734,687
August	12,221,676	10,974,481	9,668,947
September	12,206,836	10,781,753	.....
October	12,664,061	11,086,850	.....
November	12,268,520	11,068,158	.....
December	11,583,680	10,458,445	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

1925—	Receipts	Shipmts.	Stocks
July	2,639.34	3,174.10	11,550.29
August	3,216.97	1,577.99	13,189.27
September	2,929.99	5,352.05	10,767.21
October	2,869.75	1,499.34	12,137.62
November	759.66	2,571.32	12,283.62
December	2,661.87	3,441.67	11,503.60
1926—			
January	2,990.16	1,478.35	13,015.41
February	2,580.23	2,776.19	12,819.45
March	2,754.62	1,732.77	13,841.30
April	3,137.40	4,519.68	12,459.02
May	2,933.29	2,096.35	13,296.96
June	3,217.62	1,655.15	14,858.43
July	3,026.86	4,075.11	13,809.18

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks Sept. 1	1,358,218.04
Runs from wells	672,194.22
Other receipts	381,177.30
Regular deliveries	485,553.54
Other deliveries	724,776.05

The amount of Illinois oil run by the Tide Water Pipe Co. in August was 29,601.70 bbls. and deliveries were 70,213.05 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1925—		
August	673,652.38	650,649.97
September	706,434.87	610,697.61
October	706,532.00	633,682.32
November	664,556.30	488,449.19
December	666,086.99	578,938.47
1926—		
January	665,243.62	516,083.76
February	632,611.99	506,310.51
March	753,300.74	524,625.95
April	610,957.04	487,604.00
May	682,416.07	498,456.56
June	693,102.34	558,054.94
July	713,490.66	490,092.82
August	701,796.92	555,766.59

The Tide Water Pipe Co., Ltd., also delivered in August 225,332.20 bbls. of Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	New Orleans Galveston	Port Arthur Baton Rouge	Sabine Pass	Tampa	Total	Total All Ports
May	27,065	7,903	15,387	13,452	17,742	81,549	.....	.....	4,032	.....	4,032	85 571
June	24,533	11,000	22,800	34,467	15,167	107,967	.....	.....	.....	.....	.....	107,967
July	15,677	2,903	24,678	12,065	12,516	67,839	.....	.....	.....	645	645	68,484
August	14,839	10,389	24,871	17,742	17,677	85,518	.....	.....	.....	.....	.....	85,518

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	New Orleans Galveston	Port Arthur Baton Rouge	Sabine Pass	Tampa	Total	Total All Ports
May	12,387	12,258	76,516	11,645	21,543	133,355	17,710	45,226	1,936	5,677	65,549	198,904
June	16,800	10,800	87,300	6,500	21,267	141,667	25,308	42,267	4,567	3,900	76,032	219,700
July	21,517	7,774	89,548	4,774	26,194	149,806	*13,226	†39,774	22,032	4,452	79,484	229,290
August	21,903	4,581	79,871	5,323	18,742	130,420	*19,516	†57,354	‡5,161	2,903	84,934	215,354

*Received at Galveston district. †Received at New Orleans and Baton Rouge. ‡Received at Port Arthur and Sabine Pass.

GROSS PRODUCTION OF THE UNITED STATES FOR 12 MONTHS

(IN BARRELS)

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountains	Eastern Fields	Total
September:	Month	20,062,763	16,835,040	11,264,890	3,393,270	6,467,559	1,776,570	3,235,635	3,212,000	64,238,109
	Daily average	668,759	494,168	376,496	113,109	215,585	59,219	107,854	107,067	2,140,937
October:	Month	20,015,076	14,931,199	11,196,511	3,477,146	6,469,381	1,871,830	3,394,990	3,248,000	64,584,033
	Daily average	645,648	481,329	361,178	112,166	206,751	60,383	109,500	104,774	2,081,743
November:	Month	19,095,907	14,590,980	10,650,087	3,221,760	5,927,955	1,758,882	3,088,121	2,993,000	61,326,692
	Daily average	636,530	486,366	355,003	107,397	197,599	58,629	102,937	99,766	2,044,190
December:	Month	19,249,711	14,123,848	10,930,455	3,308,816	6,047,883	1,763,966	3,187,164	3,086,900	61,698,743
	Daily average	620,959	455,608	352,595	106,736	195,093	56,902	102,812	99,552	1,990,282
January:	Month	19,069,563	13,674,813	11,049,715	3,250,536	5,489,604	1,726,390	3,136,280	3,014,000	60,410,901
	Daily average	615,147	441,123	356,442	104,856	177,084	55,690	104,296	97,226	1,948,741
February:	Month	17,163,963	12,392,016	9,943,232	2,877,812	4,756,836	1,584,184	2,778,605	2,921,000	54,427,648
	Daily average	612,999	442,572	355,115	102,779	169,887	56,578	99,236	104,678	1,978,844
March:	Month	18,825,786	14,312,886	11,014,238	3,324,887	5,116,827	1,889,663	3,161,260	3,249,000	61,003,547
	Daily average	608,283	461,706	355,298	107,577	165,027	60,957	101,976	104,822	1,967,856
April:	Month	18,091,771	14,468,190	10,799,760	3,330,120	5,127,510	1,959,570	3,231,404	3,153,000	60,191,325
	Daily average	603,059	482,273	359,992	111,004	170,917	65,319	104,229	104,100	2,006,377
May:	Month	18,667,144	14,507,008	11,940,797	3,516,640	5,482,925	2,231,938	3,459,423	3,317,000	62,122,955
	Daily average	602,166	467,968	385,187	113,440	176,879	71,998	111,594	107,000	2,036,224
June:	Month	18,269,417	14,073,510	11,783,550	3,366,450	5,064,760	2,305,480	3,437,905	3,265,000	61,566,072
	Daily average	608,981	469,117	392,785	112,216	168,822	76,816	114,597	112,167	2,052,202
July:	Month	18,743,199	14,657,482	12,983,759	3,613,267	5,019,892	2,174,813	3,336,664	3,424,000	64,952,076
	Daily average	604,619	472,822	451,089	116,557	161,932	70,123	107,634	110,452	2,095,229
August:	Month	18,765,080	14,615,236	17,073,436	3,712,436	4,878,191	2,190,739	3,457,687	3,420,000	68,112,805
	Daily average	605,325	471,459	550,756	119,756	157,361	73,895	111,538	110,335	2,197,187
	Total 12 months	226,019,380	171,162,208	141,630,430	40,403,140	65,778,638	23,133,025	38,905,184	38,541,900	745,573,905
	Daily average	619,204	468,936	388,029	110,693	180,216	63,378	106,589	105,485	2,042,669

rsday,

of the
ll fields,
lines, at
ast three

1926
9,859,170
9,579,354
9,438,292
9,806,851
9,631,757
9,585,904
9,734,687
9,668,947
.....
.....
.....
.....

ondition
close of
and not
reported

Stocks
11,550.29
13,189.27
10,767.21
12,137.62
12,283.40
11,502.60

13,015.41
12,819.45
13,841.30
12,459.02
13,295.96
14,858.42
13,809.18

t of the

8,218.04
72,194.22
11,177.20
5,553.54
4,775.06

he Tide
70 bbls.
Adding
is Pipe
eries as

0,649.97
0,697.61
3,682.32
8,449.19
8,938.47

6,083.76
6,310.51
4,625.95
7,604.00
8,456.90
8,054.94
0,092.82
5,766.59

lso de-
Okla-

Total
l Ports
85 571
107,967
68,484
85,518

Total
l Ports
198,964
219,700
209,390
215,354

otal
238,198
240,937
234,023
231,743
226,692
244,196
198,743
190,282
210,961
242,741
227,643
178,844
203,647
257,850
291,328
206,377
222,955
236,224
266,072
252,202
252,076
275,229
212,805
297,187
273,905
242,669